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THE BIOLOGY OF HUMAN CONFLICT

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THE BIOLOGY OF HUMAN CONFLICT

An Anatomy of Behavior Individual and Social

BY

TRIGANT BURROW, M.D., PH.D.
SCIENTIFIC DIRECTOR, THE LIFWYNN FOUNDATION
NEW YORK CITY

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To the Spirit of Creative Coördination
that is the Essential Motivation and Meaning of
Man's Organism

"If the part is conceived without any reference to the whole, it becomes itself a whole—an independent entity; and its relations to existence in general are misapprehended."

HERBERT SPENCER

FOREWORD

THE publication of this book is sponsored by The Lifwynn Foundation. It sponsors also the investigation originated and directed by Dr. Burrow and reported by him in this book. As a membership organization the Foundation is a small community within a larger social setting. It is "incorporated" into this larger community structure and thus participates actively in the general community responsibility, economically, educationally, socially. Though small, its membership is composed of both lay and professional individuals, of so-called normal and "neurotic" types, of both men and women, the majority of whom are gainfully employed within the larger community. It is thus an active, living cross-section of human motive and action, and the Foundation is itself the unit of behavior-material studied. It is Dr. Burrow's laboratory, his "experimental set-up" in an investigation that includes his own behavior along with that of the rest of us. All the members are students of behavior. They, together with Dr. Burrow, constitute a research unit in which the behavior studied is the behavior of the student himself. Obviously this is not the accustomed approach to the meaning of human behavior. It is, so far as I know, a unique undertaking. And, as an officer of this research organization, it is perhaps fitting that I should wish to make some comment. Perhaps my ventured remarks may be of assistance to the general lay reader.

It seems to be the lot of man to be hemmed in with problems. But this may be merely a way of looking at things. For within primary motives of living there is no sad lot, no despair, no hemming in—only great capacity. Many of his problems man seems to create for himself, to throw them in his own way out of sheer

delight in working through them. And yet there are many more that seem to be thrust upon him—suddenly or before he is ready. One such problem is presented by the element of conflict within his own behavior. It has become so increasingly insistent through the ages that it is now definitely a major problem. But man, despite his marked ability to meet difficult situations, does not seem to comprehend, to encompass this particular problem of conflict within himself. It is there. We talk about it. We all know it. But we don't seem to go forward to meet it—not as a unit. It is present both in war times and peace times, in commerce, the industries and the professions; it is indicated in crime and insanity and in normality—in the behavior of all of us. And yet we seem only to stand around and look in each other's faces. Certainly, if we really knew the problem, we would go ahead—every one of us. It is our nature to do so. It is the nature of our organisms to meet this problem as any other. But as yet we don't seem really to know this particular problem. We don't seem to comprehend it, to embrace it. And it isn't easy, in a sense, for it isn't exactly like the problems we have been accustomed to. It does not at all come within the domain of our accustomedness.

In accord with his investigations, Dr. Burrow has endeavored here to outline this problem and a method for knowing it. On taking up his study, there was no guide, no precedent. From the first, from his early discovery of the "social image" and the "social basis" of the neurosis, each step was taken as a result of this investigation. The direction was dictated by the material observed —human material, slow laborious material in-laid in unrelenting accustomedness. And the problem had to do not merely with the factor of conflict but also with our own inept way of knowing it, with man's quite general, inadequate way of knowing himself. The basis of knowing turned out to be all important. There is this basis. Man embodies it. It is the same that man uses in knowing the blue of the sky and the hardness of rock—a broad organismic basis that is internal to man as a phylum. But in all matters of our relation to our kind we seem to have stepped down from this native common basis. In dealing with behavior, we seem to have set aside our organic compass, as it were, lost our organismic bearing. And so, quite as a matter of course, this first com-

prehensive book from our laboratory of behavior has taken form and substance from the human material investigated. The real problem is, perhaps, not so much the behavior of man and the element of conflict in it, as the altered type of knowing required of us in studying our own behavior. The two—the problem and the basis for knowing it—go hand in hand.

The study of human behavior is not new. Man has been at it more or less consistently ever since he began to communicate with his kind by means of symbols or words. But communication by means of speech or language entailed unforeseen restrictions. However glamorous, however useful the word and all that goes with it—talking, drawing, writing, printing, reading, symbolic knowing and mental understanding—there came with it a certain blindness. For in man's word alone there is no "balance wheel," no motive to organic constancy, no universality. And naturally with the increasing refinement of the word the restrictions and the accompanying blindness increased also.

The life of man as a whole animal, wholly in touch with his kind and his environment generally, gave promise of an organismic universality without bounds. And originally the word gave promise of being a definite asset in this organismic outreaching. But with man's use of the word something inadvertently happened. The head that spoke the word came more and more to dominate the whole body. The word as the mere symbol of behavior became supreme. And as man tended increasingly to live in his head, in his word alone, whole motivation and outlook were forgotten. So that slowly and without our knowing it, communication by means of the head and its word came more and more to crowd out the primary principles of whole living.

Inevitably there was conflict—conflict between the head and the total body, conflict among the heads of all the members of the species. Outwardly, symptomatically, this conflict has manifested itself increasingly through the centuries in all forms of inter-individual human activity—familial, national and international. Man has of course recognized the symptoms, but only to defend them; because to him the symptom bore the outline of reality. And this too was inevitable. For his knowing was, after all, not the whole knowing of which his whole organism gave

promise but only the part-knowing, the head-knowing, or the word-knowing that always accompanied the conflict he would but could not comprehend from the restricted basis of the head and the word. What is significant is that human life is now everywhere unduly restricted. It is conflict that now knows no bounds. It is conflict that rules.

Originally man's word was good. It still is. Basically, primarily, the word is sound. But not in itself alone, not apart from its matrix, not as the dictator of its own body. In the absence of the balanced organism, in our inadvertent denial of the balanced organismic sovereignty of man as a race, man's word is wholly misleading. And conflict has become a rule that now fills man's heart with fear. This human conflict has now extended to every member of the species man. Not conflict over essentials, but blind, deadly conflict over words and ideas. The species, the phylum—essentially, primarily whole—is at war with its very self, and try as he will man cannot comprehend this conflict from the basis of the word alone. He needs must return at least momentarily to the basis of the total organism of man as a phylum and pick up again the neurological threads of organismic expansion that first gave rise to man's use of the word as a medium of communication with his kind.

Naturally, in our present word-outlook, in our too mental understanding, this is not easy. But at least it is the direction. It is the native, internal, organismic direction of man as a race or phylum to re-instate the primary authority of his organism as a whole and to reclaim the word for man's more fully-rounded use. And in this book is represented the effort of a small community of students under Dr. Burrow's guidance to make at least a beginning in following this organismic direction. There is here at least the effort to blaze a trail that may serve in reëstablishing man's primary, organismic capacity of feeling and thinking, out of which the word may take new meaning and usefulness.

In thus commenting as a layman upon the laboratory undertaking reported in this book, I have in mind not only the general reader. While I have attempted to express the deep appreciation I feel personally for the broad compass of Dr. Burrow's thesis—for its soundness both for the layman and the technically trained,

and for its wide practical application socially—I have tried also to speak for all the members of our small organization, without whose consistent interest The Lifwynn Foundation would have been merely another name.

CLARENCE SHIELDS, *President*
The Lifwynn Foundation.

PREFACE

I WONDER whether in a sense an interest in mental disorder isn't itself a mental disorder; whether our mental way of looking into the way our processes work mentally doesn't of itself entail a sort of spurious infolding or self-reversal; whether it isn't necessarily an inept and devious way of approaching the basic mechanisms or the physiological machinery really accountable for man's performing in the manner in which he does perform. As far as concerns my own attitude toward the problem of man's behavior I confess that for a long time this self-recoil, this mental reversal existing "normally" or upon every hand had me wholly enslaved to its elfish caprices. But it happened that my traditions were also essentially structural, biological, and so my interest came at the same time to be forcibly centred upon the immediate machinery of the organism itself.

I shall never forget the ardor of my assault upon anatomy as part of my preliminary medical studies. After five years of Latin and Greek and the "humanities," osteology, ordinarily as dry as the proverbial bone that it is, seemed to me fairly to scintillate with scientific perspective. For such studies offered the opportunity for my first really systematized rapport with objective actuality. With it the book of revelations seemed suddenly to have opened to me and the issues of life thenceforward to take on a new meaning.

Yet there went side by side with my medical studies a profound interest, a continued preoccupation with the insistent problem of human behavior—with its motivations as well as its inhibitions. Only it began now to take shape as a problem of definite biological import. It was the *anatomy* of behavior that was becoming the centre of my interest, though the vague and imprecise terms in which my ruminations fashioned themselves

in those days would hardly have recognized their kinship with my present formulations.

Consistent with the impetus prevailing everywhere among psychopathologists, it was natural that it should be the field of neurology to which I turned with brightest anticipations. But after years spent in clinics in this country and in Europe I found to my chagrin that, as valuable as this experience was, it did not in the least further my own basic quest. Clinical neurology brought me no nearer to an anatomy of man's behavior as a whole. While a first-hand acquaintance with the symptomatology and with the neuro-anatomy of such clinical disease-entities as syringomyelia, general paralysis, tabes dorsalis and wrist-drop represented an undoubted addition to the sum of human knowledge, it early became clear to me that neither these discrete manifestations, nor the structures in which they had their seat, could even remotely account for disorders affecting the behavior of man as a total organism in his relation to the total environment. Not any more than an acquaintance with the clinical pathology of infectious diseases, disturbances in glandular function or general defects of metabolism had anything to offer in this direction. I saw that eliciting knee-jerks or other reflexes in the hope of finding a solution to the problem of man's obviously disorganized relation to an organized universe rested upon a medical premise that possessed no more authoritative basis than the type of "medicine" which led early metaphysicians to locate the soul in the *sella turcica*.

In this situation I could not but think that the occasion of my scepticism lay in some serious deviation or sidestepping in the objective attitude of man's mind generally wherever it is a question of the behavior of man and his own mind. In the universal tendency of self-reversal I had sensed within the subjective field, I seemed to feel the presence of some not clearly perceptible disorder—a disorder I felt to be present equally in myself along with other psychopathologists. For I saw that I was in the position of others of my colleagues who have fallen victim to an internal deviation which led them unwittingly to revert to mental causes for what are called mental disorders.

It so happened that in my own lame accounting for disturbances

in man's behavior as a social organism, I found the tendency of inquiry introduced by Freud, for all its subjective deflections, to be by far the most alluring of our inverted mental and social excursions. Here, I thought, was something possessing a truly rational premise. And I still think so! I still think that psychoanalysis affords a clue to something that *actually happens,* if only we can hold to the clue and through so doing acquire a perspective also upon what happened inadvertently to psychoanalysis by reason of its own subjective reversal. For undoubtedly psychoanalysis furnishes the single transitional link between our reversed habits of thinking about how we think, and a way of thought that derives from the direct observation of the immediate processes that lie back of our thinking. This unsuspected link constituted for me precisely the fascination of psychoanalysis. But in the sphere of the physiology of man's behavior as a social organism what is called for is not a mental rationale—not subjective mental constructs, however ingenious —but, as elsewhere in medicine, the objective observation of immediately perceptible processes. Here was a new field. Here, within the sphere of man's behavior, was offered the solid ground of bio-physical bed-rock, and here at last, it seemed to me, was intimation of the presence of a concrete disturbance calling for localization and definition.

It was in my quest for this undiscovered factor that I was led to seek it in a study of the human organism in its group expression. During the years of this research I finally came to adopt a method of inquiry I at first called group-analysis. In this procedure not any one's knowing—not any individual's rational ingenuity—was to count as a guide to an understanding of human behavior. In this altered premise it was human behavior that was to constitute a guide to the individual's knowing.

The story of this inquiry has been told from time to time in various published writings as its interest progressed from year to year with the extension of our group experimentation. The eventual outcome of my experiments in social orientation is now presented in the following papers which fall naturally into a coordinated unit under the title, "The Biology of Human Conflict."

In these studies I have attempted to formulate certain aspects of the altered adjustments in the sphere of feeling and thinking that took place within and among my associates and myself as a result of this daily living experimentation in the organism's total reactions as these experiments were continuously conducted by us over a period of sixteen years.

Throughout this study the reader, I fear, will feel that the same statement has been needlessly repeated many times, if in different language. But these repetitions have not been inadvertent. In a treatise of this sort the student necessarily becomes a participant in a process of adjustment within the sphere of his own bionomic adaptation. He is not tracing through the printed symbol or cipher a merely formal, intellectual account of the nature and function of this process. In truth, this book is not intended either to instruct or to entertain, to exhort or to edify. It does not direct itself toward either the student's mental or his emotional sphere of interest. It is an effort to rally subjective man to an objective appreciation of his own subjective processes. If this work does not serve the function of a series of laboratory exercises bearing the stamp of progressive precision and encompassment in objective observation, it is without significance. I realize, of course, that in the various spheres of science an investigator's form of speech is inseparable from the researches in which his findings have taken shape. His form or habit of speech is wrought into the very mold of his inquiries. Indeed there is no student or investigator who has not his own idiom. Heaven knows, to the sorrow of most people, I have mine! But while I have no intention of becoming disconsolate on this count, I should much regret it if because of a disparity in idiom and experiential background between my colleagues and myself I should be answerable for needless confusion and misconception among us.

In this connection I should like especially to draw the reader's attention to the glossary appended to the body of the book. Its purpose is not primarily to answer questions that may happen to arise in the reader's mind as to the definition of this or that particular word or usage. It is intended rather to serve as a guide to the connotation of certain terms as they are applied in the present setting. As from the beginning I have for the most part

had to plot my course through uncharted ways, I have been forced to make use of such tools as I found at hand and came only gradually to fashion them to the demands that necessarily presented themselves from moment to moment. Then, too, there has been the necessity to develop what may be the beginning of a somewhat altered terminology. I am thinking in particular of such words as "stereogenic," "phylopathology," "cotention" and so on. As far as possible, however, I have kept to words that are well established in the field of scientific literature, even if I have frequently been compelled to employ them in a somewhat unusual sense. For example, as I use the word "physiological" it includes the neuromuscular reactions of man in his total organismic behavior, though this implication is not to be found in the more restricted definition of the college text-book, devoted as it is to the study of the single organism. The case is similar with my use of the term "partitive," the meaning of which may be sensed only in its specific application in these pages. I realize, of course, that my present terminology represents perhaps but a transitional phase in the development of the principles subsumed under the term *phylobiology*. Where this is found to be so, such usage will in due course be cast into the discard like any other temporarily handy bit of scaffolding.

I believe that at this point in an author's preface it is customary to make recognition of the various authorities to whom he feels special indebtedness. Such acknowledgments present a gracious and welcome opportunity. It happens, however, that external authority has played no rôle in the work that finds its formulation in these pages. Had preceptive authority taken a hand in the group undertaking of my associates and myself, its effect could have been only to obstruct, not to further our endeavors. It is alone the small group of men and women associated with me in their variously coördinated functions who have made it possible for me, and for them, to pursue this experimental inquiry into our own daily, living reactions. It has been only through the spontaneous association with me of these few co-workers that the research of which this book offers some account has been brought to fruition. In saying this, however, I must not fail to acknowledge the support that has come to me from those of my colleagues who, like myself, are interested in the objective observation of

qualitative and quantitative phenomena—the physiologists, the neuro-anatomists, the experimental and animal psychologists and the biologists generally.

In presenting the intrinsic work of our organization, I think very especially of Mr. Clarence Shields without whose assistance from the earliest inception of my investigations the field of observation reported here would have remained unrecorded. But as with Mr. Shields, so with Dr. Hans Syz, Dr. Charles B. Thompson and others of my associates, their independent activation and adjustment toward the wider community on the basis of our group studies needs no sponsorship of mine. The work which my associates have done and are doing as members of the scientific staff of The Lifwynn Foundation represents, like the efforts of myself, a wholly spontaneous and independent investigation *of* themselves *by* themselves within the organic setting of the integral group afforded by our laboratory environment. This, of biological necessity, holds equally for all the members of our organization in whose concurrent activities throughout the years has consisted the intrinsic meaning of the Foundation. My acknowledgments, therefore, are due solely to my associates of The Lifwynn Foundation, the research organization under whose auspices my investigations have been carried on and under whose sponsorship it has been possible for me to prepare and publish this preliminary report of our community studies in human behavior.

In connection with the present book I should like to mention the assistance of Miss Aimée Guggenheimer whose part in its preparation for publication, including her careful compilation of the index, has been invaluable. I should like also to acknowledge especially the assistance of Mr. William Galt who, in addition to reading the manuscript and offering many suggestions, prepared the Synopses of Chapters and the Glossary. To Dr. Hans Syz, too, I am particularly indebted for having read the book in manuscript and having offered many helpful suggestions in regard to it.

Lifwynn Camp on Lake Chateaugay
Merrill, New York
September 7, 1936

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INTRODUCTION

KNOWING things by their names and discussing them with still other names is, in the most literal sense, a highly impractical business. "Money," "sex," "my country," "woman," "love," "repression," "right and wrong," "the I.Q.," "success," "the machine," "the gold standard," "Russia," "nationalism," "the masses," "free speech," "Jews," "passivity and aggression," "narcism," "the ego," "the group," etc., etc. are among the more popular of those abstractions that are being discussed more and more abstractly as more and more they have taken hold of the community's imaginal or symbolic life. This tendency to use more names in discussing the things we know already only by their names is not calculated to assist the community's practical orientation in relation to its world of actuality. In this socially obsessive compulsion toward the substitution of the mere labels or outer signs of objects and things for the objects and things themselves, we tend to lose all sense of the biological actualities for which these symbolic connotations stand, and in the same measure to curtail our own sensations and responses in respect to the actual objects or processes our words represent.

It is characteristic of obsessive trends that the more we do a thing obsessively the less we know what we are obsessively doing. The more obsessively we use mental signs and symbols the less we know what these signs and symbols represent. Not only this, but the more we recede from the biological actualities represented by these outer signs and symbols and the less we realize (make real) the basic meaning for which they stand, the greater becomes the necessity for employing these mental abstractions throughout our habitual social interchange. In this way we find ourselves enveloped within a vicious circle of an ever widening circumference. As George Eliot's character, Adam Bede, says:

"I've seen pretty clear ever since I was a young un, as religion's something else besides doctrines and notions. I look at it as if the doctrines was like finding names for your feelings, so as you can talk of 'em when you've never known 'em, just as a man may talk o' tools when he knows their names, though he's never so much as seen 'em, still less handled 'em."

Because of the increasing extension throughout the community of a dissociative process that substitutes words for the physiological experience presumed to underlie them, man has increasingly lost touch with the hard and fast milieu of actual objects and correspondingly with the biological solidarity of his own organism.

This wide-spread situation is one that possesses deep medical significance. Although a social problem, there is also here a problem in neuro-anatomy. For the body has its metaphors as well as the mind. This is really the essence of what Freud has shown us. He has shown us in substance that there are organic metonymies corresponding to those of outer sign and symbol. Just as we are socially habituated to place the word or metaphor in token of the actual object, so there exist among us organic surrogates and symbols which stand to us socially as substitutes for the organism's primary function. In this sense it may be said that our metaphors are but de-visceralized affects and that our hysterical conversions, our substitutive neuroses, represent a sort of metaphorical usage on the part of the organism to which there are invariable correspondences in the neuromuscular system. We need to think of this neuro-social problem not only in relation to the neuroses but also in relation to the problem represented in the community disorder commonly described as crime. Crime and insanity too are but names, just as the infinite number of symptoms under which we describe both these manifestations are again, like the remedies we apply to them, merely more names with which to discuss these two abstractions of common social parlance. But these names stand for tangible substance—for the actual physiological disfunction that underlies and actuates the processes known to us as "insanity" and "crime." As a community, however, we have never envisaged these underlying processes from a position that has been determined by the authority of controlled

laboratory observation. As a community we have failed to make contact with these tangible physiological functions through an acquaintance with the immediate actuality of our own internal sensations and reactions. But due to the continuity of our organisms racially with one another, our social behavior possesses a common substrate that is perceptible in physiological reactions internal to the organisms of us all. But though we share subjectively in distorted sensations and reactions common to us as a race, we have failed as a race to make contact with these disordered processes through the recognition of our individual kinship subjectively with them and with one another.

In our unconscious metonymy, in our unwitting preoccupation with the names of things in place of things themselves, man's knowledge in regard to the field of his own behavior is essentially at no different stage to-day from that of pre-Christian times. It is only the metaphors we employ that are different. For example, we read of the jealousy and anger of Saul toward David and of his deadly attack upon David. But how far have we advanced when, instead of speaking of anger, suspicion and jealousy, we shift our metaphors and talk in terms of "resistance," or of "delusions of persecution," or of "homicidal trends"? Again we read that David and Jonathan possessed a love for one another "passing the love of women." But what have we achieved when, after an interval of some three thousand years, we merely juggle our terms and speak of the attraction between individuals of the same sex as "homosexuality"? We also read in The Book of Genesis that Onan cast his seed upon the ground. But do we know any more when, instead of referring to the casting of one's seed upon the ground, we speak or write of sexual incontinence in such Latin or Greek phrases as "autoerotism" or "masturbation"? Then there is the story of the visit of Christ to the home of two sisters wherein we read that Martha, one of the two, had no time for Him, being "busied with many things," but that Mary was content to sit for hours at the feet of her Lord and Master in quiet communion with Him. But what advantage have we over this Biblical description of the contrasting personalities exemplified in the behavior of Martha and Mary, when we talk or write endlessly upon the psychological types contrasted as

"extrovert" and "introvert"? Similarly, in our modernistic vernacular "pride" and "vanity" become "aggression" and "grandiose ideas," "cupidity" and "lust" are transmuted into "libido" and "sexuality"; "his heart was heavy within him," as rendered in to-day's stenographic script, equals "depression," and "his heart swelled within him," when translated into psychiatric shorthand, becomes "elation." But in no instance of this verbal dress-reform does modernism approach one whit nearer the basic structures and functions underlying our metaphorical word-pictures.

In these evidences of our scientific ineptitude, of our lack of objective acquaintance to-day with intrinsic structures and functions within the sphere of man's behavior as a race or phylum, custom has merely duplicated the ineptitudes of earlier students in their relation to those disturbances in structure and function that affected the organs and tissues of the single individual. To appreciate this parallel we have only to remind ourselves how long medicine talked in high-sounding Greek and Latin about disease-processes of whose essentially objective causation and meaning it had not the ghost of an idea. "Erysipelas" affords one instance, "malaria" another, and "hydrophobia" is the example *par excellence.*

Often the objection is made that my own terminology is needlessly difficult—that I employ unfamiliar, technical terms in preference to the terms in common use. But this objection is hardly hospitable to the facts. For it is one thing for a scientist to talk in the simple terms of the layman when he is speaking of data that are already established, and it is quite another for him to do so when he is speaking in respect to a field in which the data coming under observation yet remain to be generally established. Within the field of human behavior we are confronted with material in respect to which every layman, and the scientist too in any other field, regards himself as an authority. He already knows according to his own criteria just what behavior is and how it should be described and explained. In this situation neither the layman, nor even the scientist has taken into account the circumstance that in the field of behavior there are still lacking established scientific criteria; that, instead, we have only helter-skelter misinformation and arbitrary "knowing," regardless of

any consensually established, objectively systematized basis of knowledge.

The field of man's behavior is essentially the field of his basic motivations. It is the field of those processes that relate his thinking and feeling to the objective world about him, and this field constitutes the material of precise, scientific investigation. As things now stand though, man's feeling and thinking is everybody's business. The domain of behavior universally characteristic of the race of man has not been reduced to a controlled and unitary basis of observation. Everybody "knows," everybody "understands" his own behavior and that of everybody else. What each person "thinks," what each person "knows" about life and its significance, is a matter of common gossip. What the various opinions are as to the causes of this, that or the other socially externalized emotion—fear, hate, anger, religious devotion and the rest—we have heard and are daily hearing on every hand. But what man's basic motivation is, what his basis of feeling and thinking is as a primary expression of the organism, science has not yet informed us. We are merely a prey to predetermined and predetermining opinions as they have been socially suggested by the community about us, and we do not yet know in any strict scientific sense the nature of the underlying impulse that primarily incites the organism toward a specific object or act or evidence of interest. In the midst of a boundless sea of moral and social precepts we take our motivations for granted. The result is that there is not a scrub-woman or a stevedore who has not as much "right" to his "opinion" and who is not as impressive in the assertion of it as the ablest psychiatrist or the most learned of educators. This circumstance will become eminently significant for the community when it begins to realize that such arbitrarily motivating opinions as are embodied, for example, in crime and insanity are a reflection of the community's own processes and not a condition existing merely in this or that specimen case as it is now pointed out by us in this or that particular individual.

Because of our wholesale obeisance to this superficial type of motivation we are witness to-day to no end of preposterous situations in our social communities. Men, for instance, pos-

sessing medical and biological training are practically asking the economic, the sociological and even the journalistic expert to instruct them in regard to the "causes" of disturbances in man's organism as a socially integrated whole, and to offer recommendations for its adjustment! This bizarre situation has come about because students of behavior have lacked the conditions requisite to an objective basis of inquiry into the organism as a behavior-whole and, approaching their problem from the angle of the conventional psychiatrist or the social worker, they have necessarily laid themselves open to an affiliation with the amateur and the layman. But the adjustment of man to the social world about him involves a bionomic problem that calls for such rigid laboratory controls as one finds among students and experimenters in the fields of physiology, chemistry and biology. It is only this type of investigator whose trend of inquiry prepares him for an adequate study of the fundamental motivations of the organism's behavior as a whole. These are the students whom we who are phylobiologists need summon to our aid in our effort to study and adjust the obvious disturbances in man's function as a race, as these disturbed functions are, through the phyloanalytic technique, rendered only too plainly observable in the organism of the community or of the nation as a whole. It is from the background of such strict laboratory disciplines that we are brought at last to ask ourselves the practical question: the organism as a whole *what?* But in seeking an answer to this question we need no less to ask ourselves what it is that constitutes the *not*-whole organism—what constitutes the divisive or part function that acts to impair the organism's reaction as a total, unitary process. The real need, then, is not more concreteness of theory *about* ourselves and our behavior, but a greater concreteness of function *within* ourselves as behavior-organisms.

The truth of the matter is that in their divorce from the organism as a whole our metaphorical theories and opinions *about* behavior are but hollow verbigerations, that in its use of words or speech the organism has come to adopt a mimic behavior-system that replaces the total and spontaneous behavior-system of man in his relation to the objective world throughout. This lesser,

mimetic system consists of the very small, circumscribed recording zone of behavior limited to the special senses and mediated inter-individually through the imitative function of articulation. This recording apparatus embodies, of course, an entirely valid species of behavior, but it is a limited, a symbolic or a quasi-form of behavior. It represents a model, a design for behavior, a blue-print of the organism's primary reaction rather than the full and rounded reaction of the organism as a whole.

And so man's lack of contact with his own processes is not surprising. Even in relation to the observable phenomena that lie outside of man's organism and that may be reached through the medium of his external senses—the things he may see, hear and touch—even with these man has, after all, only lately made contact in any intrinsic scientific sense. It is not unnatural, therefore, that the vast domain of sensations and feelings constituting man's own immediate, internal processes—processes which coördinate his activity as a total expression and with which he may make contact only as a total organism—should have remained as yet wholly untouched and unsuspected by him.

As we know, the degree in which man has succeeded in harnessing the forces of nature through the ingenuity of his inventions and discoveries in the fields of chemistry, biology, physics and mathematics represents a stupendous achievement. But in the unexplored sphere of man's subjective processes—in the sphere of his own thinking and feeling—it has not as yet even faintly suggested itself to him that he is dealing with a sphere of adjustment and control which, though internal to him, is susceptible of objective inquiry. When we consider the vast knowledge and control attained by man in his relation to the objective world, nothing could be more disproportionate than the immaturity of his acquaintance with his own subjective processes. Man does not even remotely sense the fact that disordered feelings and sensations that are internal to him are conditions for which a remedy can be found only in measures of invention and discovery that are also internal; that objective measures require to be applied as ingeniously to these subjective processes as the objective measures with which we are familiar in their application to external conditions. But as yet man does not realize his com-

plete unacquaintance with the area of unexplored reactions that lies back of his arbitrary, commonplace abstractions—the area that is hidden beneath the mental symbols he has come to "know" and to name as his love, requited or unrequited, his anger, vindicated or unfounded, his pride, his irritability, his self-defeating dishonesties, his jealousies, his driving acquisitiveness, his competitive envy, his abject dependence upon this, that or the other person or circumstance, his periodic and sweeping impulse to fanatical religious exaltations, not to mention those mood extravagances that ultimate in such uncontrollable outbreaks as war—in short, the infinite range of symbolic or imaginal sensations and feelings which, plaguing and defeating him on every hand, destroy his happiness and his very life. It is in his unfamiliarity with the deeper basic factors internal to him that man has failed to come to grips with the actual processes underlying all these spurious abstractions—these mere names that have vicariously become the be-all and the end-all of his existence.

Vaguely sensing something of the community embroilment into which our vicarious social abstractions have brought us, I attempted some years ago in association with a small number of colleagues to attain an inter-individual level of communication and interchange that would rest upon more basic biological premises. Tentatively abrogating for purposes of experiment the presumptive meaning of our habitual community abstractions —our customary social gestures, our numerous outer signs and symbols of contact and exchange—it became our effort to challenge outright all these various thought-habits and amenities, the traditional and preceptive acceptations to which custom had long inured us as individuals and as a community. As a group voluntarily committed to an immediate, objective investigation into its own subjective behavior-reactions, it was our effort to bring to book the many prolix psittacisms which, according to our altered premise, appeared too often to possess a meaning that was but the reflex response of habitual social routine. We determined to adopt this experimental course notwithstanding that these reflex abstractions have for ages been accepted by the social community as a valid expression of man's thought and feeling.

In this undertaking it was our purpose to create among us an

environment of sanity or of whole and healthy processes of feeling and thinking that should transcend the level of adaptation now naively accepted everywhere as fitting, desirable or normal. It was our purpose to abrogate completely the clinically prevailing assessments as to what constitutes a normal level of adaptation among us socially and to create instead a basis of sanity that attempts to question objectively its own abstract presumptions now everywhere cherished subjectively. In this outlook it was our plan to work toward a healthier basis of community adaptation generally. We had not at all in mind the conventional sanity of a collection of presumably sane individuals. On the contrary, it was our purpose to divest ourselves, as far as possible, of the reflex beliefs and opinions now everywhere crystallized in the mimic reactions of common social speech, manners and habits. By making the utmost allowance for the subjective involvements existing in common among us and appraising objectively and impersonally these automatic compulsions that now dominate man's social and individual processes, it was our effort gradually to acquire a more substantial basis of inter-individual communication and contact.

We have our institutions for the care and treatment of mental and nervous patients—our insane asylums, as they are familiarly known—and we have long recognized our debt to these institutions because of their service in restoring the clinically deviate individual to his accustomed "normal" place in the presumably "normal" community. But the undertaking I contemplated had nothing to do with restoring the deviate personality to a conventional social norm. My interest was rather in establishing both for the neurotic and for the "normal" individual an intrinsic basis of sanity and health. It was my idea to question prevailing evaluations in respect to individual and social health in general rather than accept the criteria that differentiate between deviation or abnormality on the one hand and a purely conventional norm of adaptation, whether individual or social, on the other. My aim was to question the validity of the normally accepted standards of human behavior and, along with whatever students might be interested in the adventure, to acquire, if possible, a level of adaptation that would be unfettered, un-

trammelled by the accidental and habitual criteria of human conduct now everywhere masquerading as "normal." It seemed to me imperative that there be somewhere, somehow established a *sane asylum,* however inadequate temporarily, and accordingly it was the aim of my associates and myself voluntarily to commit ourselves wholeheartedly to the opportunity afforded by such an experimental social set-up.

The result of our experiment has been a basic alteration among us toward the organism's primary reaction-trend and a fundamental revaluation in personal and social outlooks. I do not mean that as a group we have been "successful," that having been distrait, maladjusted elements in a maladjusted ("normal") community, we were at last made whole, and that finding ourselves duly shriven we were now prepared to bring others into the light. God forbid! As well a smug and neatly adjusted individual as a smug and neatly adjusted community or "group." If I understand the meaning of group—if I understand the biological import of group in the sense of an organismic unit integrated of elements that are structurally and functionally homogeneous, the only group of real significance in human behavior is the behavior-whole represented in the organism of man as a phylum. The members of our own group-organization seemed, like other normal individuals, under the thrall of what I might call a wide-spread social "apraxia"—a social apraxia or a community inadvertence in function adventitiously induced in man's behavior because of its universally superficial basis of motivation. Our endeavors aimed, therefore, toward the achievement of a creative interpretation and synthesis of our processes as they may become internally appreciable within the wider unit composing the organism of man as a species.

PART I

ORGANISMIC PSYCHOLOGY

"Es irrt der Mensch so lang' er strebt."
GOETHE

CHAPTER I

INEPTITUDES OF ADAPTATION IN HUMAN BEHAVIOR

THE beginning of science or of knowing is the unreserved acknowledgment of ignorance. This has been the attitude that has incited all earnest inquiry. It is the prerequisite of laboratory investigation. Those who enter the laboratory with opinions already formed are only obstructing the process of learning which the laboratory opens to them. This is because scientific observation and investigation depend upon the faithful response of the senses to the material immediately presented to them. To know beforehand, then, is ignorant knowing. It is to know without the foundations of knowing. It is to disavow the function of the senses and their direct rapport with the objects before them and, instead, to presume an acquaintance with the world of phenomena that is without objective verification and the test of controlled observation.

The systematized body of facts slowly amassed through the method of bacteriology was acquired through this humble attitude that acknowledged its ignorance in face of the material to be studied and that did not presume to interpose opinions already acquired apart from the objective structures and processes at hand. Before the introduction of the systematized principles of observation embodied in the science of bacteriology there existed, as we know, no end of opinions respecting the causation of infectious diseases.[1] These opinions were as powerful and as

[1] With the introduction of the conception of the infective origin of certain disease-processes it is recorded that of old one physician of more than usually devout and naive prepossessions remarked that "he preferred to consider the disease as due to the workings of Providence, which he could understand, rather than to an unknown infection of which he could form no conception." (Williams, J. W., *Obstetrics*, 8th edition, New York, Appleton, 1927, p. 992.) And this pronunciamento elicited by a statement of Oliver Wendell Holmes regarding the infective origin of puerperal fever comes to us, if you please, no less recently than the year of our Lord 1843!

assured as they were wide-spread. Ignorant people on every hand knew all about the cause of this and that illness as from time to time it made its appearance in the community. Knowing beforehand, their knowing was completely unrelated to the observable facts and to their systematization. But they knew anyhow—knew from rumor, tradition and hearsay. That is, they knew from the testimony of other people whose knowing was as preceptive and therefore as little based upon the data of objective observation as their own.

The naive acceptance of conventional appearances has always preceded the thoughtful establishment of organic laws. As we know, the primary function of science or of objective observation has been the overturning of the ingrained opinions and beliefs that constitute man's systematized body of prejudices. Man's systematized prejudices consist of inferences derived from the mere surface indication rather than from an observation of the total, intrinsic object or phenomenon.[2] As I indicated in the Introduction there is a domain of inquiry that even to-day is still left to the mercies of unwarranted assumption and misinformation, to opinions born of hearsay and rumor without regard to the objectively observable facts. This is the domain that relates to the adaptation of man's own organism to the surrounding environment. It is the domain that is commonly regarded only in the outer symptomatology of the disorders that are familiarly known to us as nervous disorders and insanity. As such it is everywhere misconceived as a sphere of inquiry in which the cause of disease or the defect of function is to be attributed to the false ideas and opinions or to the "mental" and emotional attitudes presented by the individual patient. In saying this I am not losing sight of the varying personality factors and interrelated reactions emphasized in the customary clinical picture. Nevertheless in this sphere in which presumably the adaptation of man himself is the concern of scientific inquiry, preconceived opinion and non-experimental methods have practically preempted the field.

[2] As Pavlov remarked in his Bequest to the Academic Youth of the Soviet Union, "While you are studying, observing and experimenting, do not remain content with the surface of things."

Accordingly, consistent with the tendency to metaphor and abstraction, opinions and ideas are arbitrarily proclaiming on every hand that opinions and ideas are the real cause of man's disorders of behavior when, in fact, they are traceable to objectively perceptible processes analogous to infectious or other disease conditions. The attitude is general. It is not alone the Christian Scientists, the Theosophists, Faith Healers and other religious sects who ascribe man's disorders of adaptation, both as an individual and as a community, to "psychic" causations. These unwarranted opinions, based upon rumor and hearsay, are rampant generally. Such psychic interpretations of psychic disease are the very warp and woof of our social fabric as it is now constellated. Even within the field of medicine itself there is still preserved the same attitude that prevailed in relation to the problem of infectious diseases before the introduction of bacteriology. In this attitude opinions and ideas and their attendant emotions, based as they are upon rumor, hearsay and tradition, are still universally accredited as the causative agents in the production of disorders occurring in the sphere of individual adaptation—the sphere of those processes which relate man to the world of outer objects, as it relates him to himself and to others of his own species.

But to-day with our deepening sense of scientific criteria the investigator of processes that affect inter-individual adaptation is confronted with a unique biological and sociological situation. The opinions, the ideas and their accompanying affects, as expressed not only by the neurotic individual but also by the "normal" community generally, can only represent to him mere symptoms of a basic disorder affecting man's organism in its inner functional processes. They can represent but the signs of a deeper organic disfunction notwithstanding that these ideas and opinions—the symptoms indicative of the underlying disorder in man's bionomic orientation—are regarded on all sides, by layman and physician alike, as constituting the disease-process itself.

When we consider the fundamental principles of science, we find that, both as regards the material to be investigated and the method of investigating it, these principles rest upon three essen-

tial criteria: First, science, unlike philosophy, metaphysics, dogmatic religion and the all-too-popular theoretical psychologies and sociologies, deals directly with actual structures and their functions. Science depends ultimately upon experimental verification, not upon mere mental concepts, images and ideas, however valuable these concepts may be in relating concrete phenomena to the general laws that govern them.[8] Second, science deals with structures in their solid-dimensional relations; it penetrates to the inner nature and composition of the structures in question and does not confine itself to mere superficial appearances. Third, science deals always with universal properties. It deals with elements as integral to the species or phylum of which they are a part, not with a single or isolated structure regardless of its continuity with the group or whole in which it is structurally and functionally an intrinsic component.

In the science of bacteriology, for example, or in the study of bacterial life as related to the life of man, we deal not with one or two or several hundred bacteria in respect to one or two or several hundred individuals of the species man, but with the various species of bacteria as a whole in respect to the whole species man. Further, the method of approaching the relation of these two species to one another is one that deals with actual structures and functions. It deals with the chemical, the physiological and the anatomical relations and alterations involved in the invasion of the tissues of one of these species of organism by the other. The science of bacteriology has not to do primarily with the ideas, the concepts or the mental images one may conjure respecting the *genus bacterium* and its pathogenic influence upon man or kindred animals. It deals directly with the observable manifestations immediately reported by the senses as we

[8] "In natural science and other sciences we do not start with fundamental notions and then search for their realization in the world around us, but on the contrary proceed from an examination of the world to the formulation of fundamental notions." Thomson, Sir J. Arthur, *Science for a New World,* New York, Harper & Bros., 1934, p. 346.

"What we call now the objective method, or the impersonal method, or the scientific method of getting at the facts without forming any conclusions beforehand, without starting with any preconceptions as to where we are coming out—that is the thing that began to get into human life in a conspicuous and pronounced way with the advent of modern science." Millikan, Robert A., "The Diffusion of Science," *The Scientific Monthly,* September 1932, pp. 209–219.

apply ourselves to the investigation of these micro-organisms in their relation to the organs and tissues of man as a race or phylum.

In contradistinction to the method of bacteriology and to that applied in every other field of science, the method of inquiry universally adopted by man in respect to the eminently practical problem of himself is throughout non-experimental and arbitrary. In the domain of inquiry that has to do with the adaptation of man himself as an organism in relation to other organisms and to the world of external objects, his inquiry is characterized throughout by the complete absence of the three criteria inherent in the method of science. In the study of the reactions of the organism of man as a totality of individuals commonly interrelated one to another and to the world of outer phenomena, the method of inquiry has had to do not with the tangible structures and functions of the total organism or phylum under investigation, but with the mental impressions, with the images and concepts everywhere entertained anteriorly, preceptively, by the individuals of the species in respect to one another and to the interrelations through which they are united socially into groups or communities.

Thus, in attempting to deal with his own reactions, man has inadvertently dealt only with mental pictures or with the surface appearances of his own reactions. He has woefully defaulted in respect to the basic criteria of science which require definite structures as the legitimate material of investigation and demand methods that will penetrate to the intrinsic composition of this material. Furthermore, in his short-sightedness he has dealt with a particular individual and with this individual's ideas and emotions, with his opinions and traditions, his likes and dislikes, in short, with the personal assets and liabilities of an element that is arbitrarily presumed to be separate or organically isolated from the group or phylum of which it is an integral part. He has dealt with an element or individual which he assumes to be organically detached and discontinuous, and to call for a quite private, special and distinct interpretation rather than deal with material constituting the structure and function of the species as a whole.

If one examines a metal he does not question the universality of the metal as it is found throughout nature. It would not occur to him to assign the discoverable properties of the metal under examination only to the particular specimen in hand. In the sphere of biology the attitude of the scientist is no less comprehensive or inclusive. The component elements in a rabbit or guinea-pig are typical of the structures and functions observable in the species rabbit or guinea-pig as a whole. When it comes to man, however, the arbitrary assumptions of the private persona represented in the attitude of each individual in relation to every other render the scientist quite unable to adopt a comprehensive and inclusive attitude toward the investigations of the behavior of man as a species or phylum.

In man's complete and unwitting abrogation, however, of the basic canons of scientific observation as he is confronted with the biological phenomenon of himself, we are faced with more than a casual or accidental *faux pas* in scientific method. We are faced with an inadvertence of development or of adjustment within the intrinsic organism of man himself. Our problem, then, is not one that calls so much for a needed adjustment in our habitual way of thinking as it calls for a fundamentally reorganized instrument with which to think. For this deficiency in appraising man's own behavior is internal and intrinsic to the organism of man himself. The defect is one that constitutes an impediment within our own subjective machinery as it relates itself to others and to the world of others as shared in common by us. And so the needed adjustment demands our biological recognition and application of a totally altered method of investigation—a method of investigation that is equipped to deal with modifications incident to the adaptation of man's total organism internally and as a species.

In all disorders of adaptation—in all mental and nervous disorders—the outstanding condition is found to consist in the presence of a conflict. The factor of conflict in psychoneurotic patients is unfailing. This conflict acts as a barrier to normal interests and activities or to the individual's healthy adaptation to his surroundings, and the treatment, therefore, is directed toward the reconcilement of the patient's conflict and toward

preparing the way for his satisfactory adjustment to the world about him.[4]

As ordinarily interpreted this conflict or division observable in neurotic patients is due to the irreconcilability between the invitation of purely wishful trends on the one hand and the practical demands of actuality on the other. It is a division which in its symptomatic expression appears to consist of a conflict of emotional impressions and interests, and it has been described as a mental division or conflict. As ordinarily stated, this separation or conflict represents a breach between "phantasy" and "reality," the assumption being that the world as it "normally" exists—the world as it is represented, let us say, in the physician who is called upon to treat the patient—is a world of reality and health, and that the patient's inclination, contrary to that of the physician and the rest of the community, is either wholly or in part (psychosis or neurosis) in the direction of wishfulness and phantasy.

Man needs, however, to relinquish his rôle of mere onlooker in relation to the processes which shape his life, and to become an intimate and integral participant in the study of these processes. In the sphere of man's own internally appreciable sensations and reactions—in the sphere of those processes that comprise man's own life as subjectively experienced by him with all its discord and conflict—there is the need of a fundamentally altered basis of inquiry if we are to evaluate the processes of man's life for what they *are* rather than for what he fancifully assumes them to be. This task requires a wholly fresh evaluation of our bionomic place in the universe. It requires a closer sense of the widely interrelated processes internal to man—processes which make up the organism's general bionomic scheme and in which larger bionomic whole the individual is a bio-physically functioning element.

Students sometimes speak of not understanding our phylobiological position, but our phylobiological position regards this statement as one that does not rest upon a full and clear understanding of what "understanding" means. There are two im-

[4] Freud, Sigmund, *Collected Papers,* New York, International Psychoanalytic Press, 1924 and 1925, 4 volumes.

portant aspects of the process of understanding. The one aspect is conceptual, and the other is emotional. Phylobiology entails a student's reckoning not alone with his conceptual, but with his emotional basis of understanding. Let me illustrate. I may go into a library and within the course of some hours I may quite justly claim that I have achieved an adequate understanding of the principles and aims of the two major economic systems represented on the one hand in communism and on the other in capitalism. I have looked carefully into clear, concise statements of the position fundamental to each system, and the major premise in each case stands out in perfectly definite outline before me. But does any one suppose for a moment that a communist can go into a library or anywhere else and in the space of a few hours (or even longer) acquire an understanding of a capitalist? Or vice versa? Either of them, capitalist or communist, may have as ready a capacity for reading and understanding the written word as I have and may therefore understand as clearly as I do the written statement of the principles embodied in these two opposed systems. But this does not in the least facilitate their "understanding" of one another. The reason is simple. In one instance understanding involves the operation of cold, dispassionate, cerebral reasoning. In the other it entails the operation of heated, excitatory, empathic affects.

Now it happens that phylopathology presupposes a process of understanding that includes the organism's internal, empathic sensations, and through them an understanding of the empathic reactions of other organisms biologically identical with one's own. Accordingly, one's conceptual understanding or his not understanding in the purely descriptive, symbolic, cerebral sense possesses no significance whatsoever in the absence of an underlying basis of comprehension that resides in the organism's empathic reaction-sphere. When in reply, therefore, to the critic who complains that he cannot understand my work I say that I cannot either, I am not in the least attempting to be facetious. The statement is perfectly true. In the sense in which the critic is using the term—in the sense of the cerebrally detached, mentally focused onlooker—I am quite sincere in saying that I myself have not attempted to "understand" the work in which I

am engaged. This work has been a process in empathic, physiological adjustments internal to my organism and to that of others, and in relation to these processes my mental understanding has been compelled nolens volens to accept a subordinate function. Whatever students have essayed this laboratory undertaking have done so in precisely the same spirit in which laboratory work is undertaken elsewhere. They have essayed it not because they understood it, but because they recognize in it something that is to be understood.[5]

We have not yet recognized that mental understanding or misunderstanding necessarily depends always upon the way the data appear to "me." In the absence of one's own organic coordination and integrity, understanding or misunderstanding arbitrarily depends always upon the opinions which this "me" has derived from other people. For this reason a scientific position that offers a new view-point, a position that affronts habitual emotional patterns, as is certainly the case with phylobiology, awaits an understanding that rests not only upon objective evidence but also upon the correction of those socially habituated affect-prejudices that operate against a clear, unbiased understanding of the material presented.

As we know, the significant developments in science have in every instance entailed an altered frame of reference from which to view habitually accepted data. Changing our place of residence to the heavens and observing from this altered frame of reference the mere speck that constitutes the earth, as astronomers we began to comprehend for the first time the relation of the earth to the planetary system about it as we would never have comprehended it had we remained gazing in naive ignorance at the surrounding heavens, our feet proudly planted upon the earth as the centre of all things. It was an altered frame of reference that led to Columbus' verification that the earth is round. It was an altered frame of reference that confounded Joshua and

[5] Without doubt many persons who at first declare that they do not understand the principles of a science will heartily concur in these principles as soon as enough forward looking students have accepted its basis of investigation. This is the proverbial reaction toward scientific inceptions. But this is not alarming. Such persons belong to the vast mass of those who must first be assured of social support of an objective concept before they can lend themselves to an intelligent study of the objective evidence upon which it rests.

the Popes and permitted Galileo to pinion the sun and unleash the earth. So with Newton, Darwin, Priestley, Pasteur and Einstein, the essential contribution of each of these investigators has consisted in the replacement of established tenets through the introduction of an altered frame of reference.

In a sense Columbus was not unique, but it was unique that he changed his frame of reference. In the same sense Einstein is not remarkable for his mathematical genius; it is rather that the rest of us are remarkable for our mathematical bluntness. Fundamentally an Einstein or a Bach is really no different from the ordinary run of us. Certain accidents or concatenations of circumstance favored their pushing through to a natural development. There is nothing remarkable in this. As motivations expressive of the phylum the achievements of genius, however restricted in specific directions, represent something essentially healthy and free, while with you and with me there is the tendency to yield to world-wide inhibitions notwithstanding that they are wholly alien to us as ethnic organisms. Contrary to common belief, the mind of man in its continuity as a phylum is not finite; it is infinite. All organic processes express a condition of growth that is infinite, phylogenetic.

Adopting a basis of reference that regards the organism of man as a behavior-phenomenon comparable to the expression of any discrete physiological process, the scientific investigation of the human relations of this organism is dependent upon the investigator's consistent maintenance of this same objective basis of reference. In attempting, therefore, to forgo the habitual premises which color and distort one's personal and social contacts, it has been the effort of my associates and myself to introduce a frame of reference which should replace as far as possible the private view-point of the separate individual in respect to his personal and social contacts. To this end we have tried to discount the various moods and prejudices arising from personal reactions and to provide measures for observing those deeper reaction-processes that arise within the organism as a fundamental behavior-expression.[6] Very early in my work with groups or com-

[6] Burrow, Trigant, "Psychoanalytic Improvisations and the Personal Equation," *The Psychoanalytic Review*, 1926, Vol. XIII, pp. 173–186.

munities of individuals, however, it became evident that in this field of human relations we were dealing not only with the total individual organism but with a principle that involves the race of man as an organismic whole.

There is no question but that among psychopathologists there has been the increasing tendency to regard social reactions in the light of objective physiological behavior-processes. Yet when it comes to a question of the subjective social reactions of man himself, even the psychopathologist is loath to relinquish his habitual psychological prepossessions and regard such reactions as an immediate behavior-problem. The psychopathologist, however, is confronted with a problem that has to do not only with reactions internal to his fellows but with reactions that are equally internal to himself. There are indications to-day that if the psychopathologist is really to cope intelligently with such behavior-disorders as neurosis, psychosis, crime and social unrest—disorders which are becoming increasingly urgent in the individuals and communities about him—he is faced with the demand to establish an altered frame of reference that includes himself and his approach to man's habitual neuro-social processes.

Recent years, with their world-wide social disorientations and their concomitant ineffectual striving for social order and peace, have demonstrated the unquestioned need for the scientific study of man's relation to man. The physical sciences have established a trustworthy correlation of the materials envisaged by them. In the objective world—the world that man looks at—the scientist has indicated conclusively his ability to see clearly and impersonally and, correspondingly, to study, correlate, alter or remedy the material or conditions observed by him. But in matters having to do with the inter-individual feeling-relationships of man—in the world of potential and active effectiveness that is inseparably woven into the fabric of man's daily living—there is lacking the coördinated thinking that characterizes man's efforts in other fields of objective science. The essential principle of unity recognized by the scientific world in its objective inquiries fails completely when the effort is made to take objective account of man's daily living interchange with his kind. True, the attempt has been made, but always the result is mechanical

and superficial. It does not touch the heart of things, but turns rather into philosophy, religion and mysticism—man's three age-old recourses in all matters touching his inter-individual relationships.

The consistent impersonal observation of man's relation to man is not only an obligation; it is a necessity. Psychology, psychiatry and sociology have done yeoman service in the field of human behavior, but the spark that has repeatedly lit up the field of the objective sciences has not yet flashed for man in his endeavor to study his own behavior. The biologist's objective acquaintance with the structures and functions which determine the health of man's behavior as an externally observable organism is very different from his appreciation of the internal co-ordination of functions that determine the biologist's own behavior and health. The habituations that are personal to the observer—the same habituations that exist in man throughout the human race and that form the material to be studied—have thus far constituted, in themselves, the barrier to a clear unbiased observation of them. Though everybody knows that the obstacle to human vision is the beam and not the mote, such homilies of the commentator are not to the point. The investigator of human behavior is confronted to-day with a new task in a new world—a world as old as the dawn of human activity but practically as new to man as the domain of cellular biology before the invention of the microscope.

In the field of man's inter-individual behavior—the field in which our approach has for ages been characterized by catch phrases, snap judgments, the intuition of the arts, religion and philosophy, and that has been supported by the moral "rightness" of all individuals on every hand—there is clearly the need for the same impersonal type of observation that characterizes the external world of scientific objectivity. But there is also the need that the organism itself become an instrument of observation if it is to reckon with processes internal to itself in a manner comparable to our observation of processes external to the organism. The scientist, in pursuance of his studies of the world that is looked at, has progressively invented such instruments as the

measuring rod, the lever, the balance scale, the compass, the telescope and the miscroscope. He has invented or discovered instruments appropriate to the material investigated. But in dealing with man's relation to man, we are confronted with behavior-material, with feelings or emotions or with a world of actions and reactions, that lies *within* the organism, and in the observation of this material there is need for the rediscovery of that instrument which is constituted of man's organism as a total process.

Physicians devoted to the study of the pathology of behavior—to the various aberrations of conduct described as mental and nervous disorders—have as yet invariably occupied themselves with the symptomatic behavior of the patient and his reactions as they appear in relation to the physician's ideas and opinions of them. Accordingly, the physician or psychiatrist occupies himself only "thinkingly" (symbolically) with the patient's disordered processes. In the effort to offset this inadvertence and reach a clearer understanding of man's internal disorders of behavior, I was impelled to set aside my habitual thinking-reactions in relation to the patient and to discourage as well the patient's thinking or mental habituations in regard to me, to himself and to others of the external world—habituations expressed in his opinions, his beliefs, his phantasies and his dreams, whether waking or sleeping, in his likes and dislikes, his phobias and his obsessions based, as they are, upon this or that idea or "thought." All this customary material of observation has been systematically disregarded. Instead, confining the physician-patient relation to a basis of reaction that is common to us as a species, my procedure has come to hold the patient consistently to an observation of his affect-reactions and of his complete subordination to their mastery. Setting out from the experience of this common set-up, my aim has been the adjustment of the immediate physiological patterns of reaction that underlie the patient's obvious affect-impediments.

Adhering strictly to this altered technique it soon became clear that the problem of man's maladjustment or neurosis is not one to be met through treating people who run to doctors with what

they feel to be their personal troubles. The problem is one of broad social and biological significance in which the doctor is no less involved than the patient. Upon a sufficiently broad basis of inquiry it will be found that in his own way the doctor is no less prone than his patient to seek the help of others for troubles which he too thinks are personal to him. He too runs to those upon whom he is dependent. He, like the patient, is confined to the narrow and narrowing alternative of getting or not getting what he wants, contented and "happy" when he gets it, discontented and "unhappy" when he does not. But the actual disease does not reside in this or that individual, nor is a remedy to be found in the momentary ameliorations of mood temporarily produced in them. The disease is to be found in a general bionomic disturbance that is *only outwardly reflected* in disorders of the individual, as well as in social conflict and economic imbalance. The real cause is traceable to a disturbance in man's physiological concinnity. As this disturbance has its seat in his own generic processes, it affects the species throughout.

In this broader interpretation of phylobiology an analysis of the distorted feeling-states expressed in "mental" disorders shows them to rest in every instance upon the alternative tension-reaction of satisfaction or dissatisfaction, pleasure or pain. This divisive condition, this tension-dichotomy of satisfaction or dissatisfaction is found to be concomitant always with the individual's external feeling or sense of advantage as over against other individuals. Such an external sense of advantage, however, is shown to be entirely unconnected with the individual's primary state of satisfaction or dissatisfaction as an organism. This secondary tension-reaction of a patient, or the external feeling of advantage to which I refer, is traceable always to an oversensitization regarding his own social appearance or representation as contrasted with that of others. Now in the experimental investigations of phylobiology this secondary feeling-disorder, based upon personal satisfaction or dissatisfaction and dependent upon the individual's appearance in relation to other persons—their approval or disapproval—is found to consist of tension-reactions that are characteristic not alone of the sick individual called neurotic or psychotic. This feeling- or tension-dichotomy

is a condition that equally characterizes communities composed of so-called healthily adapted or normal individuals.

As a result of our investigations of internal tension-reactions common to the phylum I have been rendered wholly renegade to habitual psychotherapeutic interpretations. The prevailing interpretation of "mental" disease represented in the general community, and now systematized within and sponsored by the community, has come to be questioned in the light of a broader frame of reference—a frame of reference which includes the mental basis of the community itself and therefore of the physician also. In consequence the problem of conflict has taken on a far wider significance. The conflict or division, as now commonly interpreted by physician and layman, has come to be seen as a purely secondary and extraneous eventuality. It has been found to possess a purely epiphenomenal interest and hence is not suitable material for scientific or biological study and interpretation.

The psychoanalytic school has undoubtedly given us an invaluable clue to disordered behavior-processes when in its study of a special type of reaction-disorder, that of the psychoneurotic, it pointed to an invariable discrepancy in these patients between certain symbols and the affects which have become unconsciously associated with them. But phylobiological investigation indicates that the essential discrepancy has not to do primarily with an accidental association between a patient's "affect" and the symbol, but with the neuro-social anomaly of the affect itself, no matter what may be the accidentally associated symbol. The discrepancy, as I hope to show later, is really inherent in the constitution of the affect as such. That is, the affect as it habitually occurs embodies a linkage between feeling and symbol that in itself is to be questioned as symptomatic of a neuro-social disturbance.

Freud's discovery, then, involved the relation between the individual's symbols and his feeling or emotion. He showed that in the neurotic patient there is an artificial attachment between certain of his symbols and the feeling or affective content of his experience. Freud showed this relation to exist and to be operative unconsciously, automatically—one might even say, organ-

ically.[7] The demonstration of this organic metaphor occurring reflexly within the life of the individual and its apparent influence upon neurotic behavior is the real crux of Freud's thesis.

But when we come to deal experimentally with this element of conflict in human experience, and study it as a phenomenon observable in the physician as well as in the patient, in rich and in poor, in professional and in layman—when this conflict is approached as a biological phenomenon affecting the species of man throughout, we are straightway met with definite functional modifications existing internal to the organism as a total behavior-reaction. These modifications internal to the organism constitute definite physiological factors that produce definite deviations of function. Such deviations of function, though generic, have hitherto been accounted for only from the personal standpoint of this or that individual and in their purely secondary, superficial or "mental" manifestations.

Consider for a moment the commonplace event in the daily lives of us all that is characterized by the words, "He makes me tired" or "He makes me mad." Whatever we may be accustomed to "think" about it, "me mad" or "me glad," because "he" or "she" does or doesn't, is or isn't this or that, marks an attitude that has not the validity we assume it to have. It is an affect born of a phantasy that is purely dissociative. Being securely tied to an image, this affect never is and never can be resolved. Inasmuch as the affect "mad" represents an imaginal dependence upon him who "makes me mad," I am equally dependent upon him imaginally for "making me glad." But mad or glad, my affect represents the organic anomaly of a mentalized or symbolized feeling.

As will subsequently be seen, the situation is not so simple as the individual tends to make it from his customary imaginal basis. But neither is it as difficult as it appears when complicated by the intricate rationalizations of our social and international affections and disaffections, our agreements and discords. What difficulty there is will not be met, however, until it is recognized

[7] Burrow, Trigant, "The Psychological Analysis of So-called Neurasthenic and Allied States," *The Journal of Abnormal Psychology*, 1913, Vol. VIII, Note 1, p. 246.

in the setting in which it properly belongs. Shifted from the outer world of image or appearance to the inner world of man's organic experience, the situation, as I shall attempt to show, takes on a wholly altered meaning. For the difficulty lies not with the object imaged but with the subject imaging. What is important for the subject is his recognition that, where he is confronted with problems of individual and social affect, there is always question primarily of intrinsic reactions perceptible within his own organism.

I shall not adjust my intrinsic state of feeling through anything that any one may offer me within the sphere of my mental, projective or imaginal reactions. The optimistic, "understanding" personality can with his cheery, optimistic ideas bring cheer and optimism to my *ideas* or *symbols* of feeling, but his ideas do not touch the sphere of my intrinsic feelings themselves. The subordination of the life of social man to these popular but wholly illusory comforts explains why his feelings are so utterly erratic and uneducated to-day. Crime, war, religious fanaticism, unfounded beliefs and superstition, pride, egotism, social ambition, professional competition, business and personal intrigues, sentimentalities, jealousies, fear, suspicion, dependence, cunning, deceit, susceptibility to praise, the disposition to flatter or to be flattered, elation and depression, obsequiousness, meanness, irritability, the obsessive preoccupation of neurotic, psychotic and so-called normal personalities with sexual images or with narcistic phantasies, our devotion to the thousand and one images of private advantage which are man's daily preoccupation—all these expressions betray a wide-spread disorder within the feeling-sphere of man.[8] But, as I have said, disorders within the feeling-sphere of man are reflections of a physiological disturbance that is intrinsic to the organism. Residing inside the organism—the very organism which now looks outside itself in its effort to account for its objective disorders of orientation—these disorders of man's own internal behavior tend also to be accounted for as

[8] Under the term "autistic thinking" Bleuler has described this attitude of personal bias not only in pathological conditions but also in certain normal expressions.

.. Bleuler, E., *Das autistisch-undisziplinierte Denken in der Medizin und seine Überwindung*, Berlin, Verlag Julius Springer, 1919.

though they existed outside of himself. But no projective, mental or cerebral acuity, however keen, can penetrate or make contact with this sphere of phenomena internal to man. In short, *ideas* of feeling, *mental* connotations and symbols are powerless to touch or alter or in any way educate the chaos of uncoördinated feelings which now dominate the organism of man as a species.[9]

Accordingly I have for some years definitely declined to occupy myself with the pet "mental" or emotional symptoms of Mr. Jones or Mrs. Brown, notwithstanding that they, as everybody else, like nothing so much as to be thus segregated, along with their self-images, from the rest of the kingdom of animal man. Instead, the effort of my associates and myself has been directed toward such internal measures of adjustment in these patients as would disclose the tension-discrepancies between two physiological patterns of reaction within the organism. These two patterns embody on the one hand those tensions that belong to the organism in its primary total behavior, and on the other those tensions discriminable as concomitant to the organism's secondary symbolic adjustments. The symbolic adjustments themselves do not constitute in their outer (mental) aspects the intrinsic material of the physician interested in disorders of behavior. The real disorder consists of physiological alterations within the organism as a whole, and a remedy is to be effected only through physiological measures addressed to these patterns that determine the organism's total behavior.

[9] As I have said, so often in respect to the thesis inherent in phylobiology it has been the comment of my colleagues that they cannot understand it. But when one considers the sort of thing people *do* understand if it subsists under popular psychic auspices, it becomes easier to realize why it is that they have so great difficulty with a thesis in regard to behavior-disorders that rests upon the evidence of objective experimentation.

CHAPTER II

DEVELOPMENTAL INCEPTIONS IN PHYLOPATHOLOGY

WHEN, in the early tens of this century, the dynamic conceptions of Freud were sweeping everything before them with what seemed at last a truly fundamental account of the problem of nervous disorders and insanity, my own appreciation of this fresh view-point was not less sympathetic than that of many other students of psychopathology.[1] But while I was among the first in this country to be identified with the Freudian trend, the basic position of psychoanalysis, notwithstanding its merit and the undoubted recognition due its originator, did not always seem to me to offer the conditions of a completely satisfying solution. The element of denied fulfillment in the sphere of a patient's sexual life unquestionably showed itself to be related to the various psychic manifestations, obvious and latent, which presented themselves either in his waking symptoms or in his dreams. But this element of denied desire, of repressed libido, however hospitable a latitude was given it in Freud's interpretation, did not appear to me by any means the whole account of things. Though it seemed to explain much that had long been puzzling in the behavior of the neurotic personality, it seemed also to leave out of reckoning much that was equally significant.

What this factor was, was at that time not clear to me. But there was still left unanswered the meaning of certain elements that also require to be included in any complete picture of the neurotic diathesis. For the observation and analysis of patients of different types of psychopathic maladjustment offered evidence

[1] Barker, L. F. and Burrow, Trigant, "The Psychotherapeutic Treatment of the Functional Neuroses," Forchheimer, *Therapeusis of Internal Diseases,* New York, D. Appleton & Co., 1913, Vol. IV, pp. 569–581.

of the existence in these personalities of a trend which was by no means fully covered by the conception of the patient's denied expression in the sphere of the sexual instinct as formulated by psychoanalysis. As important and as insistent as this factor proved itself to be, there was apparently the need of a fuller inquiry into the basic causes of these disorders.

And as one reviews the principles embodied in Adler's individual psychology it is evident that it presents in essence no different case.[2] It strikes the same note, but on the other side of the gong. Here it is the individual's striving for self-satisfaction through over-compensating for the difficulties of nature and establishing his power by dominating his social milieu. These compensative demands constitute his conflict and occasion the complex multiplicity of appearances represented in the symptoms of the patient's neurosis. But again something is missing. There is still a further trend as little accounted for by Adler in his theory of compensatory drives prompted by feelings of inferiority as in the Freudian hypothesis of an unsatisfied sexual craving due to obstructed outlets to the libido. With both interpretations, however valuable in throwing light upon certain aspects of mental disorder that had too long remained hidden, there seemed to be wanting some further element necessary to a complete account of the structure of human personality from the standpoint of its lack of fitness to meet the demands of a healthy adaptation to human life.

This lack, whatever it might be and however ill-defined as yet, was according to my observations, too marked to be passed over. The observation of first importance to me was that this unreckoned element seemed to be characterized by a quality which bore no relation whatsoever to a dichotomous principle of striving or not striving, getting or not getting (*Lust-Unlust Prinzip*),[3] to acquisition or to self-denial—no more than the motion of a star or the growth of a plant has to do with striving and with self-acquisition. Apparently it was an element or quality that lay wholly out-

[2] Adler, Alfred, *The Neurotic Constitution,* New York, Moffat, Yard & Co., 1917.

[3] Freud, Sigmund, "Formulierungen über die zwei Prinzipien des psychischen Geschehens," *Jahrbuch für psychoanalytische und psychopathologische Forschungen,* 1912, Vol. III, pp. 1–8.

side our customary "normal" reckonings. Indeed there seemed ground for the view that the interpretation of the neurosis as dynamic (striving)—its interpretation as a conflict of the self to be settled through the satisfaction of the self—bore precisely the marks of the "normal" bias of interpretation. An interpretation derived purely from the normal basis of explanation habitual to the normal interpreter was, it seemed to me, necessarily one-sided. So that the explanation of the neurosis on the basis of the normal aim of getting or not getting for oneself, with its relentless strivings and contentions, individual and social, already carried with it a subjective bias of observation which unavoidably colored anteriorly the significance of the phenomena to be observed. From these considerations there seemed required a broader frame of reference than that represented by the normal background of interpretation. And, in fact, in the laboratory analysis of social groups which was subsequently undertaken by my associates and myself, it was found that this normal, average or commonly prevailing view regarding the subjective motivations of human action represents no authentic basis of scientific measure in the field of human pathology. We found it to be as devoid of scientific authority as the common or average view, medical and lay, that prevailed in the community regarding the causations of infective diseases prior to the discoveries of modern medical science and the introduction of laboratory methods of approach to the study of the essential pathology of these conditions.

In this early sensing of an unreckoned element that was quite outside the habitual concern of dynamic psychology and in the accompanying realization that this dynamic interpretation of the neurosis represented the prevailing normal bias of society lay the basis of a completely altered approach in my study of the neuroses. Accordingly, the trend which from the beginning occupied my investigations into the cause of personality-disorders forced upon me as a psychopathologist the inclusion of the social or community basis of reaction commonly called "normal" along with the reaction regarded as deviate or neurotic.[4] It extended the prob-

[4] Burrow, Trigant, *The Social Basis of Consciousness—A Study in Organic Psychology,* International Library of Psychology, Philosophy and Scientific Method, New York, Harcourt, Brace & Co.; London, Kegan Paul, Trench, Trubner & Co., 1927.

lem of disordered mental states to include also the mental processes of the community at large, with its false beliefs, biased judgments and hasty conclusions, its unaccountable irritabilities and emotional impulses, its discrepancies of reason, its ideas of reference, its compulsive competitions; and, what is of special importance, it included also the processes habitual to the psychiatrist himself as an integral element in this wider community expression.

This widening of the field of observation entailed a radical shift of the problem of mental aberration from a presumably isolated phenomenon to a phenomenon which involved the community as well. It was a shift from a condition supposed to be traceable only in a particular individual to a condition that is also traceable in the normal social personality. The shift was one from a process supposed to exist wholly outside the normal community, and capable of being observed quite impersonally by it, to one which affected the normal community no less than the presumably divergent personality of the so-called neurotic. This meant not only a shift of the point of attack in respect to the problem of mental and nervous disorders but also a shift in the method of attacking it. For from a truly biological basis either expression, whether social or individual, represents a condition that is internal to the organisms affected and that necessarily calls for an internal method of attack.

The view, therefore, that, in their essential composition, in their elementary structure, these inconsistent or deviate behavior-reactions are as characteristic of the general community as of a particular individual demanded an internal stock-taking such as must ultimately extend itself to the community at large. It became evident that in scientific consistency no other course was possible. When through the investigations of the bacteriologists there was found the cause of diseases which assail the community as a whole, it became manifest at the same time that the understanding and eradication of these diseases depended not only upon the discovery of the bacterial cause operating internal to the organisms affected, but also upon the dissemination within the community of educational measures which would enable it to co-operate in a general programme of community hygiene and

prophylaxis. In the same way, it seemed to me, an altered approach to the field of man's subjective disorders, analogous to this altered approach of medicine in respect to objective structural manifestations, was definitely indicated if the problem confronting the community in nervous disorders and insanity was to be met in the spirit of the scientific laboratory.

These considerations led me to cast about for some means of studying the problem of the neurosis which would eliminate the factor of the personal equation inseparable from the person interpreting.[5] To this end I was led to the idea of an analysis which should take place in a group of persons in which no one individual would hold an authoritative position in relation to the others except in the measure in which his thoughtfulness and intelligence automatically qualified him to act in a responsible capacity. My idea was that each participant would seek to discover the nature of the motivation to the customary expression of his thought and feeling as well as test for himself the nature of the motives to the reactions socially stimulated by him. At the same time he was to register and, in as far as possible, determine in turn the motive to whatever reserve or hesitation or distortion might occur in the spontaneous expression of himself and of others. There was not the slightest interest in hearing about the individual's ideas or opinions as such, or in knowing what he might at any time have thought, said or done. Such reminiscent preoccupations were neither here nor there. Nor was there any concern to know what he planned at some future time to do. The effort was to reach the organism's immediate motivation in relation to the situation at hand as evidenced in the common uses of speech, manner or gesture current among social communities. It was our effort to determine in how far these uses constituted a primary expression of the organism and, if they were not a primary expression of the organism, to determine what was the occasion of the distortion and indirection represented by them, as well as what would be the organism's expression in the absence of this distortion. In short, the interest of my associates and myself was entirely unrelated to considerations of individual predilections. It had to do only with the symbolic interpolations in man's social interchange

[5] See note 6, page 12.

as a phylum and with their observable influence upon the reactions of the organism as a whole. Our concern was not with social conduct but with animal behavior, not with morals but with physiology.

Nothing could have been more unexpected than the discovery of the wide interval between the feelings and the words with which supposedly normal people express their feelings. What is more, nothing apparently presented greater difficulty than the effort of the individual himself to recognize this discrepancy between his overt language and the intrinsic feeling or motivation for which it was presumed to stand. Though in actuality a bitterly painful ordeal, this endeavor to bring oneself up against and to see the complete and incorrigible falsity of the verbalized expressions of individuals socially toward one another proved of vital significance in its potential influence upon human behavior. For in such experimental sessions with varying types of groups—groups composed of both normal and neurotic subjects, of aristocrat and proletarian, of rich and poor, of professional and lay individuals —it became evident that in its inter-individual exchange the normal community labors under the tendency to a constant transformation or displacement of its spontaneous feelings. It was demonstrated in and before us as a community or group that the neurosis or disharmony in adaptation, which supposedly characterizes only the isolated personalities described as nervous or insane, is, in fact, a condition that affects no less the expressions of normality throughout. The recognition of a common or social neurosis is one thing, however, but to acquire a technique for intelligently coping with it is quite another. This, then, was the real problem.

At least it became clear that in respect to the emotional sphere every one has admittedly his human side of which he fears to speak, notwithstanding that his associates disclose themselves as possessing a no less human side than he. There was no clue as yet to the meaning of this "human side." But it became apparent that there existed a general state of repression or, perhaps I should say, of social reservation, quite apart from the sense of "guilt" attaching to those wishes for instinctual gratification which had been previously disclosed in the psychoanalysis of each

of us. It was evident that there still persisted among us a social epidemic of apprehension and that this apprehension had somehow to do with our social appearance. As a community or group we were evidently under a social obligation, a community covenant, to appear presentable or "good." Though hitherto unsuspected, apparently there was something in the minds of all of us as private individuals which, if disclosed, might render us "bad" or unpresentable and which must under no circumstance be revealed. But it must be repeated that this factor was not associated with guilt in the accepted sense. The question apparently was only, did we look or appear "nice," or didn't we? Were we liked, or were we not? This was interesting. It was interesting as a purely phantastic, superstitious, emotional bias or belief for which there was as yet no conceivable explanation, much less a remedy. And so experiment early showed that it was not specific deeds committed or contemplated of which there was any question of withholding acknowledgment because of the criticism or social penalties attaching to such ineptitudes. What was found was that the sense of guilt as it has been emphasized hitherto does not exist. What does exist is a sense of self-consciousness and secret self-defense, and this, expressed in its lightest vein or in its initial provocation, again comes back to: "Am I liked, or am I not liked?"

From the very beginning of the group procedure, however, measures were naturally taken to avoid as far as possible any occasion that would encourage social self-consciousness and secrecy. Irrespective of whatever feeling any student in the group might ordinarily entertain in such matters, it had already been agreed that, as far as material brought to the laboratory was concerned, there was to be conceded no difference between thought and act, wish and performance; that whatever "wrong" was desired was, psychologically or morally, as good as done; that whatever was "right," whether phantasied or actualized, was, as far as concerned our analytic undertaking, as good as not done. There were no credits and no discredits among us. In other words, in the interest of experiment the effort was made to secure in the group such a technique as would render practically meaningless the commonly accepted social distinction between what is morally

right and what is morally wrong. But the effort was utterly unavailing as far as concerned this prevalent social impetus toward the good appearance or toward feeling oneself "right" or "liked." For inseparably attached to every idea, as it bore upon the reactions of individuals socially, was a feeling-prejudice or affect possessing a connotation that was obdurately either "good" or "bad," and this connotation referred without exception to the advantageous or disadvantageous *appearance* of the individual in the estimate of those about him. Apparently what was alone the concern of each individual was his social presentability. This phantastic element influencing social relations and inhibiting their natural expression, I came to recognize under the term *social images*.[6] The social image, then, is the individual's mental picture or idea along with the superstitious feeling, emotion or affect attaching to it as this affectively toned idea is related to the ideas of other persons from the point of view of this wholly superficial "right" or "wrong" appearance; that is, from the point of view of the individual's advantage or disadvantage in respect to the opinions or social images of others.

The enormous extent to which life in civilized society has ceased to be the natural expression of the organism's intrinsic behavior and has become instead the continuous effort to maintain an *external appearance* of behavior was one of the extremely important disclosures resulting from the contact and interchange within our analytic groups under conditions which permitted an objective, non-personal observation of human reactions. This altered basis of inquiry did not deal primarily with psychological reactions as they are commonly understood. Our interest was at no time concerned with the psychological observation of this or that projective, mentalized or external reaction. It was directed toward the operation of those integrative processes which relate to man's physiology as a whole and which affect man's adjustment to his environment on the basis of his primary bionomic adaptation as a phylum.

Our group experiments, then, fully substantiated our early sensing of the inadequacy of the view which posits a sick indi-

[6] Burrow, Trigant, "Social Images versus Reality," *The Journal of Abnormal Psychology and Social Psychology*, 1924, Vol. XIX, pp. 230–235.

vidual as over against a well society. While this particular social phase of our investigation marked only an incidental finding, I am, in this moment of retrospect, purposely emphasizing it. It was apparent from the beginning that we were confronted with two situations. The first was represented by an unreckoned element in neurotic behavior, and the second by the prevailing bias of normal society as reflected in the dynamic interpretation of the neurosis. As may be imagined, this completely entrenched social bias presented almost insurmountable obstacles to its social investigation. In regard to behavioral reactions in the human subject, this bias has in part taken form, as I have said, in the assumption that there is the personality who is thrown out of normal adjustment because of a discrepancy in his manner of adaptation as compared with that of the social reaction-average estimated as normal. But notwithstanding that this position is one that prevails generally, it was early felt by us to be no longer tenable. It was felt that the explanation of the disharmony in the mental processes of the individual as representing his failure to measure up to the standards of conduct prevailing throughout society generally does not go deep enough, that it is not sufficiently biological or genetic in its approach. Moreover, continued experimentation with social groups showed that the standardized opinions and criteria of the social reaction-average as they relate to individual conduct—criteria which repose upon the ambivalent standard of striving or acquiescence, of getting or not getting—are not to be credited. The evanescent alternatives that from moment to moment determine the conduct of the individual from the point of view of his private advantage, the "right" and "wrong" alternatives corresponding to the dichotomous principle of getting or not getting which throughout society underlies the ever varying incitements to human behavior—these external and inconstant elements constituting the "normal" basis of social behavior are too fleeting, too ephemeral to influence the organism as a whole on the basis of its adaptation to the environment as a whole. In a word, these quite arbitrary and external evaluations which have descended to us from the varying and inconstant mores of our predecessors are but the external trappings of social habit. They are not competent to produce the deeper pathological

processes which are internal to the organism as a phylum and which constitute the material of investigation on which the present thesis rests.

In addition, there is a circumstance to which we have already called attention that is of far greater immediate significance. Actual investigation shows it to be by no means true that the standards of behavior represented by the community are different from those of the neurotic, or that they impose upon him, as a sort of outsider, an unwelcome censorship which acts as a deterrent to his "biological trends." As a matter of fact the analysis of community reactions has made plain that in respect to its habitual drives toward self-satisfaction the community is itself in no better pass than the neurotic personality. It has made plain that the conduct of the community as a whole is based upon a code of behavior which permits any individual to do at all times as he personally sees fit to do, provided only that he obtains momentarily his own consent and that he sees to it that he is not detected by the quota of the community that represents the censor. But this is the rule of conduct in which we find the neurotic personality already amply versed. This is precisely the method of ethics in which, both by training and habituation, he is already past master. From the point of view, therefore, of the habitual sphere of adaptation that is marked by striving for or against—the dichotomous sphere of the individual's private self-interest or, in the terms of Freud, the sphere of the ambivalent unconscious—neither the neurotic nor the normal is in the least handicapped because of an absence of coaching in the arts either of self-deception or the deception of others. But, as I have said, this plane on which rests the alternative of self-interest represented in getting or not getting, whether its expression is individual or social, does not represent the whole story when it comes to the inclusion of all the elements composing human personality. Indeed the half has not yet been told, nor the beginning of it, if account is taken of the element to which I referred a moment ago as something existing wholly apart from the domain of incentives and activities that are represented in the individual's drive toward his own private interest, either personal or social.

The school of dynamic psychology has undoubtedly given a

powerful impetus to our understanding of nervous diseases in unearthing the factor of a definite internal issue, of a tug-of-war within the very personalities of these patients. This conception of a psychic conflict, of a battle of opposed trends waged within the domain of the feelings or emotions of neurotic patients has unquestionably afforded a most significant step in solving the riddle of the neuroses. Something is sought, and something denies; something strives but something does not yield; something contends resolutely for its own, but the answer is not forthcoming. But to invoke a moral censor supposed to reside in the conscience of the community with which the patient is identified (super-ego) and to assume that the patient's instinctive trends are in conflict with its ethical edicts will not suffice. It is too easy. The conscience of the community is simply not there—not in the sense of an interdiction that is unwelcomely superimposed upon the patient. The patient and the community are a part of the same social fabric. Sociologically as well as biologically they are continuous one with the other. As we have seen, the nature of the social conscience is not such that it offers anything extraneous or different from the neurotic conscience. Both being equally flexible, both may be equally bought off, depending upon the advantages that are promised and the securities provided against the chances of discovery. While the recognition of a psychic conflict in the neurotic personality has undoubtedly contributed to point the way to a fuller understanding of these processes, the two elements in this conflict as assumed by the psychologists of the dynamic school are not adequate. As I have said, they are not biological enough in their basis or in their scope, and I was accordingly led to look elsewhere for an explanation.

Freud had from the beginning, as we know, laid great stress upon the factor he called the patient's "resistances." The patient, he found, was held back because of resistances to the relinquishment of his unconscious phantasies and to the acceptance of the demands of actuality. This constituted an exceedingly valuable and, in truth, a fundamental conception in the system of psychoanalysis. There were sexual satisfactions which the neurotic patient repressed, while the "normal" and presumably healthily adapted individual was quite comfortable and secure in these

same satisfactions. Perhaps the patient's sexual libido had fastened itself upon some quite inappropriate object which would not permit it to pass. Perhaps it was an incest-phantasy, or a sadistic attachment, or some markedly autoerotic fixation such as his supposedly healthier confrères within the community had in due course outgrown or sublimated in their healthier adaptation to the community norm.[7] Perhaps. But there was still the element of conflict to be accounted for which required something less arbitrary, less chimerical, than the alleged virtues of the normal community. The virtuous reproaches, which according to Freud's interpretation are supposedly directed by the community toward the less worthy conduct of the psychopathic personality, were, in my reading, not the answer.

This problem interested me. Clearly there was the presence of a strong urge in these patients and it was not finding fulfillment. On the contrary, as Freud has repeatedly shown, it was constantly expending itself in idle wishes and unprofitable phantasies. Before every invitation of reality one found these personalities in the fell clutch of their resistances. But there remained the problem, why resistances? And to what? If there were resistances, against what were these resistances directed? Opposition necessarily entails two terms. In face of this problem our experiments with social groups gradually made plain that there was certainly no accounting for this factor of resistance on the ground of any extraneous, any external condition. There was no outside, no superimposed influence or "censor" affecting the individual or the species of individuals which might constitute the opposite factor in this conflict universally waged within the human organism. What had been considered a circumscribed problem of repression presumably influencing the individual socially, or from without, was seen to be part of a total biological situation involving the individuals of the phylum generally. This broader encompassment made possible no other conclusion than that the elements contributing to this conflict were to be found within the individuals or communities composing the human species itself. In other words, the conflict was internal and in-

[7] Burrow, Trigant, "The Origin of the Incest-Awe," *The Psychoanalytic Review*, 1918, Vol. V, pp. 243–254.

digenous to the organisms in which the element of struggle or of opposition was to be found. But let me go back for a moment.

It so happened that for a good many years before our development of group-analysis I had been making very careful observations of mentally ill patients on the basis of certain precise and clearly discernible character-manifestations. There were observable in their reactions certain consistent and invariable elements or qualities of character that were unmistakable. As I have already intimated, these qualities belonged to a zone or domain of feeling and motivation in these patients that had apparently no relation whatsoever to the sphere of phantasy or to the element of the wish likewise to be observed in them. Indeed this realm of motivation appeared to be absolved from all complicity with the sphere of the patient's conflicts or struggles—with his wishes, his strivings, his desires and contentions. The two domains of feeling and motivation did not, from the point of view of origin and function, make intrinsic contact at any point.

So much, then, for the counter-drives, for and against, that rage at one and the same time and with equal persistence because of one's dire concern as to the personal outcome of his private acquisitiveness. In contrast to this element of striving, the principle of behavior to which I refer was characterized by a certain pervading quiet, a certain interior calm and self-possession or, may I say, a certain authoritative integrity of function. Evidently it was a quality that was deeply ingrained in the organism irrespective of personality-variations, lending it a sovereignty and security that was native to the race. Furthermore, this principle of reaction was in my observation by no means confined to the neurotic individual. While more readily discernible in this type of personality by reason of the background it offered in contrast to the turbulent strivings and conflicts so fiercely, so dramatically presented in these patients, persistent study showed that there was no less the presence of this quieter, more self-contained sphere of behavior in normal personalities than in the neurotically disturbed individual. This observation was quite in keeping with the related finding that there are no less present in so-called normal personalities all the elements of conflict that exist in the

neurotic personality. Besides, these elements are as active and as intense in the behavior of the normal community, whether manifest or latent, as in the seemingly deviate personality regarded as neurotic.

But just what this deeper quality was, what its intrinsic nature, was not yet suspected by me. It appeared at times too remote, too little a part of our habitual experience to be in any way accessible to observation. It seemed to elude the ordinary processes of study and inquiry hitherto familiar to the student. Except for circumstances which gradually led to a totally different field of investigation—a field as unfamiliar as that of histology until first opened to scientific investigation through the invention of the microscope —this domain of inquiry into the foundations of man's adaptation to the environment as an individual and as a social organism would have remained for me a sealed book. But it must not be thought that my effort in the moment to describe this altered domain of inquiry or the requisite adjustments for approaching it can offer more than the merest indication of a research which required years of study and training on the part of myself and those associates who entered upon it with me. The completer account of this research must await a later chapter.

It may be of interest to mention that the underlying quality or mood of quiet self-possession of which there had been the constant intimations throughout my analytic work with nervous or emotionally disturbed patients did not indicate any peculiar endowment within these personalities. The "peculiarity" lay in the attitude of the onlooker toward it—it lay in the habitual attitude of aloofness which, individually and as a community, we have over a long period continued to hold toward the domain of human personality that is really closest to us.

It would seem that there are bonds—innate, intrinsic bonds of purpose and effectiveness—which give consistency and solidarity to the organism of the individual, as they give consistency and solidarity to the organism that comprises the species of man as a race. This solidarity of purpose—this integrative urge within the processes of man—is represented organically in an undercurrent of function that is continuous throughout the organs and

tissues of the body.[8] This physiological undercurrent of function with its consistency of purpose extending throughout the organism is a condition with which man has lost touch. His preoccupations with the separate, discrete elements that constitute his personal and conventional interests—interests dictated by the exigencies of those reactions associated with the interpolation of language or of outer symbol—have tended to replace and to deprive him of a sense of this deeper biological endowment. In our constant entertainment with the symbols of life we have become less and less at home with life itself. As individuals and as communities we fail to recognize that however handy as signals or indicators our words may be, and notwithstanding the thousands of years they have been employed in the service of man's convenience, man's interest in language or in mere mental communication is wholly secondary and ephemeral compared with the deeper organismic sources of functional activity and intercommunication that reside in the physiological continuity of the phylum as a whole.

Expressed briefly, the outcome of our laboratory investigation into human processes as they are immediately observable was the rediscovery and application of processes fundamental to man's biology, individual and social, as gradually the sensations and feelings of the organism concomitant to these processes were brought to awareness and rendered more and more articulate. Through our group procedure it became possible to distinguish between reactions and sensations belonging to a domain which is under the control of the external word or sign and which represents man's secondary mental adaptation, and those processes

[8] Cannon, Walter B., *The Wisdom of the Body,* New York, W. W. Norton & Co., 1932.

Coghill, G. E., *Anatomy and the Problem of Behavior,* London, Cambridge University Press, 1929.

Child, C. M., *Biological Foundations of Behavior,* New York, Henry Holt & Co., 1924.

"Behavior Origins from a Physiologic Point of View," *Archives of Neurology and Psychiatry,* 1926, Vol. 15, pp. 173–184.

Herrick, C. J., *Fatalism or Freedom. A Biological Answer,* New York, W. W. Norton & Co., 1926.

Goldstein, Kurt, *Der Aufbau des Organismus. Einführung in die Biologie unter besonderer Berücksichtigung der Erfahrungen am kranken Menschen,* The Hague, Martinus Nijhoff, 1934.

which are regulated by the deeper structures of the organism in its physiologically unified function.

It will be understood how these considerations, contrasting as sharply as they do with prevailing interpretations in the field of psychopathology, led gradually to a totally altered background of observation and to correspondingly altered premises in respect to the entire problem of human adjustment as it affects the internal adaptation of the individual to the world of objects and events surrounding him. It was for me no longer an individual problem or one that referred to a special class of individuals. The problem became a definitely objective, biological one and its scope comprised the race of man from the standpoint of its growth and development as a social organism. With this conception of nervous and mental disorders as a problem involving an anomaly in racial evolution, it became evident that there was first the need for laboratory inquiry into the processes determining the behavior of the human organism in its total reaction as a phylum and that this inquiry must be governed by the same rigid principles that govern investigation in other laboratories of science.

Thus as a result of our general trend there was developed a field of investigation and methods that were in accord with those of other objective sciences. The chemist, as we know, takes a fragment of the phenomenal world into the limited confines of a test-tube in order that he may determine the intrinsic nature of this world-wide element. The biologist, too, may select a tiny section of tissue in order to determine the nature of a structure that extends throughout an entire species or order in the plant or animal world. Similarly, the small heterogeneous group of students, which included my associates and myself as an integral part, constituted a fragmentary element or section whereby the student of social biology was enabled to study experimentally in its immediate setting the habitual reactions that constitute the behavior of the human organism as a generic phenomenon. It was this laboratory principle that came to form the general basis of our investigations in phylopathology and that led ultimately to the adoption of the group-method of analysis, or to phyloanalysis as it came to be called in a later period of its development.

In the process of this development there was, of course, the

necessity to consider the firmly established belief that the self-styled "normal" community represents a state of health, while the condition found in the neurotic personality is due to his resistance to this social criterion of health. Very early, however, as I have said, this position was found to be definitely untenable. Later steps in our phyloanalytic investigations indicated that the real trouble was an internal physiological conflict and that both the neurotic and the normal community are equally victims of this internal conflict; in brief, that there exists a common social condition of neurosis and disorder entailing conflict and resistance within the organism of man throughout.

Because of our progressively intimate experimentation with social groups this finding was not surprising. In the phyloanalytic setting experimentation is necessarily conducted through the subjective participation of all the elements comprising the group, and therefore the experimenter is perforce both observer and material observed. Briefly, both the field and the method are, as in other sciences, generic. The procedure holds strictly to those accepted canons of science which under no circumstances admit the possibility of a special or privileged class of material to be observed. As a result of this altered approach to human behavior-disorders it became gradually clearer that man's symbols or language as they commonly mediate human feeling and expression are not the all-sufficient medium of human contact and interchange they are generally assumed to be. It was found that man's acquisition of the symbol or of language has, in the process of his development, accidentally thrown out of adjustment or coördination trends which are basic in maintaining the functional balance of the total organism and in amalgamating the individuals of the species into an integrated biological unit. With the knowledge or consciousness that is built up from the acquisition of signs and signals chosen for man's handier use there has through an inadvertence been constructed an artificial personality or ego that is quite unrelated to the primary organism of man in its total unitary function. It is true that the physiological system belonging to the domain of reactions which are communicable in terms of language represents an integral part of the total physiological organism and that this symbolic system possesses its legitimate place in man's

social and economic scheme. This system, however, becomes biologically quite adventitious when through a miscarriage of behavior, later to be explained, it is kept functionally separate from the total system of the organism regarded as a physiologically spontaneous and integral whole.

The story is a long one. The quiet, self-possessed mood to which I have alluded as having first been sensed only intuitively as a quality inherent in neurotic personalities was found through actual group experimentation to be symptomatic of the organism's primary physiological unity as a phylum. On the other hand, the domain of conflict and uncertainty in these same personalities, as in normal individuals, was found to be symptomatic of a physiologically divisive condition existing within the organism of man both as an individual and as a phylum.

Needless to say, there intervened many years of research between my first psychoanalytic observations of this quieter, more self-possessed mood and the experimental verifications of the physiological basis upon which it rests. It was only later that there was established the relation between the first psychological intimations of this hitherto unrecognized element and the physiological evidences of it subsequently confirmed through investigations into the organism's primacy as a unitary sovereign whole. Likewise it was only later that the group- or phylo-analysis of socio-biological processes came to define in clear biological terms the meaning of this as yet undifferentiated element existing in the personalities of both normal and neurotic subjects. Eventually, however, there resulted the adoption of a definitely physiological basis in the interpretation of those individual and social disturbances of adaptation we see expressed in their outward symptomatology as neurosis, crime and social unrest. Not only this, but the same basis was found applicable to the interpretation of man's equally inadequate efforts toward integration which we see expressed symbolically or in their outer symptomatology in the form of competitive organization, diplomatized peace conferences and the endless rationalized, get-together programmes of superficial unity and order.

Throughout this work I shall frequently have occasion to speak of the domain of phenomena described under the term symptoma-

tology, meaning by this of course the domain that treats of the outer signs of an inner condition. In the sphere of medicine, wherever there has been question of a disease of a part or organ causing a disturbance in its structure or function, our concern has been to demonstrate and to remedy the disease itself, while the symptoms have been useful chiefly in affording evidence of the presence, location and nature of the disease. In the field of psychopathology on the contrary, or in the sphere of the organism's impressional reactions, that is, in the sphere in which there occur disturbances of behavior or of function that affect the adaptation of the organism as a unit, there has been the universal tendency merely to symbolize these behavior-disturbances—merely to give them names or *talk* of them as expressions of "the organism as a whole"—and hence to emphasize only the outer signs and symptoms of these behavior-processes. In this way we overlook the possibility that in these disorders also there may be demonstrated the actual existence of a consistent and clearly recognizable physiological disturbance answerable for them. Because of this "normal," wide-sweeping oversight it is not unnatural that students of behavior have mistaken these disordered impressional reactions, to which they have referred logically enough as "mental," for the inner physiological disturbances in function primarily responsible for them.

I have spoken of Freud and of Adler, and reference should now be made also to the important psychological teaching of C. G. Jung. Jung's work is not such as one may easily range beside that of psychoanalytic investigators generally. To attempt to do so would fail to do him justice. Above all, Jung's outlook possesses an immeasurably wide scope. Resting largely upon basic historic processes, its compass is essentially sociological. Though there may be question as to the interpretation of the material envisioned by him, the data from which he infers his concept of a "collective unconscious" with its primitive and archaic image-formations indicate this investigator's interest in the broader impersonal factors of human motivation.[9] From this background it would be difficult

[9] Jung, C. G., *Die Beziehungen zwischen dem Ich und dem Unbewussten,* Darmstadt, Otto Reichl Verlag, 1928.
Die kulturelle Bedeutung der komplexen Psychologie, Berlin, Verlag Julius Springer, 1935.

to think of Jung as concerning himself primarily in fitting the details of a psychotherapeutic system to the needs of a patient. In his recognition of wider horizons in the sphere of human adaptation, Jung does not contract the perspectives to a patient's capacity of accommodation. It is the patient who must expand his outlook in conformity with an ampler cosmogony. In brief, the neurotic individual is, for Jung, not so much a patient to be ministered to, as a student whose disturbed processes attest both a wholesome impatience with his inadequacies of function, individually and socially, and a fundamental capacity for adopting saner human values.

Rank too deserves special recognition for his outstanding contributions as a student of abnormal psychology. Nor is he to be left behind in his zeal for fresher concepts and formulations. As an instance he states in his more recent writings that the neurotic involvement should be understood as an outgrowth of a social reality which embodies a great deal of self-deception and pretense.[10] According to Rank also, there is a tendency in the neurotic individual toward a more wholesome adaptation. From this angle he criticizes the inadequacies and self-contradictions of current psychoanalytic theory and practice. For there is a definite tendency on Rank's part to recognize, at least theoretically, the relation of over-individuation to the problem of the neurotic individual. But though Rank refers to the "falsity of reality," he is not consistent in carrying through his theme in its wider implications. Whether or not one accords with the psychological principles upon which the methods of Jung and Rank rest, one cannot question the high ground upon which these principles stand nor the broad ideology that underlies them. But notwithstanding the great subtlety, grace and brilliancy of their *ideas,* the actual material of these investigators does not embody the primary, protoplasmic stuff of a true biological science.

The present study will endeavor to show that there is the possibility of a direct physiological approach to disorders which affect the organism as a whole. It will attempt to show that, through

[10] Rank, Otto, *Truth and Reality, A Life History of the Human Will,* New York, Alfred A. Knopf, 1936.

Will Therapy, An Analysis of the Therapeutic Process in Terms of Relationship, New York, Alfred Knopf, 1936.

this direct approach to these disorders of which the outer symptoms consist of a disturbance in the impressional field of a patient's adaptation, we may reach a definition and a remedy for these disturbances that will be as clear and as consistent as the definitions and remedies we are accustomed to seek for disfunctions affecting a part, organ or system of the body.

In view, however, of the evident need to consider those symptoms that are reflected in the sphere of man's impressional adaptation, it will be my explicit aim in the two chapters that follow to indicate this symptomatology in human processes. In order to avoid a possible confusion, I should like to explain not only the different aspects of the domain of symptomatology but also to indicate the different periods of my research into the causes of behavioral disorders. In the next chapter I shall give some account of the more advanced period of our research and emphasize the symptomatology of those divisive reactions that are to be observed in man's social processes. I shall then return to the status of my investigations at their beginning and give as briefly as possible the story of my earliest intimations of the organism's symptomatology as it reflects a basic physiological unity in the single individual. I have given prior place to the material which deals with those processes that mark man's social conflicts and disorder because with these processes we are from long habituation only too familiar. Not that we are as yet by any means competent as a community to cope at all clearly with them. Indeed, in dealing with the symptomatology of the divisive reactions which may be seen in our more obviously discordant social processes, we shall be no little chagrined to find ourselves upon home soil. Nevertheless, if for no other reason than that of the obvious discomfort of these divisive processes and the pain and loss they entail, we are forced to concede that there is here something calling for intervention.

But when it comes to the symptomatology of those reactions which are expressed symbolically in the more benign, outwardly harmonious reactions of man, as discussed in Chapter Four, we shall find ourselves quite unawakened to the presence of pathology or to any necessity for action, because, such is the assurance of our accustomed feeling, everything in this domain of man's

experience appears to him to be just as it should be! It is inevitable, then, that we should be quite unprepared to deal with this sphere of man's maladaptation. Indeed in our attitude toward those reactions which are but the symptomatic reflection of a basic unity and harmony in human life, we shall find ourselves as yet unfortunately for the most part strangers. For in the process of the organism's evolution toward a symbolically socialized or mental level of adaptation, the reactions that belong to this more equable mode of man's outer symptomatology have undergone an exceedingly subtle and elusive transformation.

There is no question but that there exists a basic principle of unity, and also a symptomatology that unfailingly reflects it. But, having now become enlisted in the service of the artificially individuated or discrete system consisting of the separate persona of each individual, these outwardly benignant expressions as little reflect to-day the physiological behavior of the organism in its primary unity as do the expressions of discord we see in the obvious manifestations of social disparity and conflict. Being the reflection of an internally harmonious reaction that has become artificially isolated and discrete, this beneficent symptomatology or outer aspect of harmony, as commonly accepted, is not an expression of the harmonious functioning that exists within the phylum as a totally organized pattern of behavior. On the contrary, when viewed in its wider generic implications, this species of symptomatology reflects also a definite disunity and imbalance within the organism.[11]

We are sufficiently acquainted with the clinical expression of the first or divisive type of behavior in the strivings and agitations of the more hysterical types of reaction, and in its social form we may recognize it in such manifestations as political dissension, commercial and industrial competition, crime and war.[12] The second type of reaction is represented clinically in the attitude of withdrawal and quiescence characteristic of dementia praecox,

[11] If difficulty is experienced when I speak of "generic implications" or use the term "separate persona," I must ask the reader to await the fuller development of their meaning in later chapters.

[12] In regard to crime Dr. Charles B. Thompson has expressed an interesting view-point in his recent paper, "Some New Aspects of the Psychiatric Approach to Crime," *Mental Hygiene,* 1936, Vol. XX, pp. 529–545.

while socially we see it manifested in expressions of poetic, religious, humanitarian endeavors and in the generally beneficent adaptations that prevail among us outwardly, symptomatically, in the form of "peace," domestic accord, national unity and in the endless conventional amenities that form the plexus of man's more benevolent interchange.

It is toward the second type of reaction, or within the sphere of man's benign symptomatology, that we shall, as I have said, find our attitude to be most naive. For the outer appearances of order and concinnity, which are everywhere accepted upon their face value and whose validity as a bona fide social tender has never for a moment been questioned by the general community, are naturally less amenable to objective challenge and inquiry. This circumstance, however, does not greatly matter, as the factor of symptomatology is, after all, only of secondary concern in the present work. It is for this reason that the two succeeding chapters are, in the stricter sense, merely introductory to our main thesis. My primary purpose in referring to these outer expressions observable in human processes is to indicate their concomitance with definite physiological conditions existing internal to the organism—internal not only to the single organism but internal to the organism of man as a species.

It will be my endeavor, then, first to show that the divisive expressions we see in the symptoms of conflict and disorder characterizing human behavior are traceable to a condition of conflict and disorder that is physiological and internal to the phylum; second, that there also exist outer symptoms or evidences which, though commonly overlooked because of their external social plausibility, likewise reflect socially an internal physiological condition of man's organism. I shall further attempt to show that through an inadvertence in man's social evolution these apparently docile manifestations with their outer aspects of unity and harmony also betray upon investigation an underlying physiological conflict and disparity. But though I shall indicate a symptomatology of conflict on the one hand and of concinnity on the other, and though each gives equal evidence socially of an underlying physiological conflict, I should like in the beginning to make clear that my basic purpose is to indicate the presence of a primary and

sovereign principle of physiological integration lying back of all behavioral phenomena. Before proceeding, then, to a consideration of our major thesis, I shall devote the next chapter to a discussion of the symptomatology of man's divisive social reactions. The succeeding chapter will be given to a consideration of those harmonious expressions which are likewise observable in man's outer symptomatology and in which there may also be traced the presence of a basic physiological disorder in motivation and behavior.

CHAPTER III

THE BEHAVIORAL FALLACY OF RIGHT AND WRONG[1]

I SHOULD like for a moment to focus our inquiry upon the factors which determine human behavior in its typical symptomatology as reflected in the good-bad, the self-versus-non-self division existing among us individually and socially. On the basis of this dynamic, striving, competitive type of adaptation with its dual, self-contradictory premise we may review briefly the implications of this adaptive mode in its ethical and economic significance within the community.

As one considers the turmoil of things in the world to-day, two phenomena stand out as being of major importance. One is the existence throughout society of a condition of economic insecurity, the other of a condition of ethical instability. These two phenomena represent in reality an acute phase or crisis in a process which has marked the cultural history of man from a very early period. The two conditions, though occurring simultaneously, would seem to have arisen quite independently of one another. The marked disturbance in economic values and the equally marked disturbance in moral values appear to be quite unrelated. Certainly the economists and students of ethics in their efforts thus far to solve our social difficulties have dealt with these two problems as quite separate disorders possessing no intrinsic bond of connection between them. In the present moment of social discord and confusion an approach which postulates an essential

[1] Paper read in outline before the Section on Legal Psychology, The Ninth International Congress of Psychology, Yale University, September 3, 1929. Published originally under the title, "Crime and the Social Reaction of Right and Wrong—A Study in Clinical Sociology," in the *Journal of Criminal Law and Criminology*, 1933, Vol. XXIV.

identity between these two spheres of human conduct may offer certain features which are not without interest.

Science, as it surveys the structures to be investigated, does not concern itself only with the superficial manifestations of these structures, but seeks to discover the hidden element accountable for the obvious appearances.[2] In social disorders, however, in economic competition and conflict, the obvious is still at a premium; man has yet to develop a technique for isolating the element or hidden causative factor answerable for these disturbances. In the sphere of human affairs every one prefers to assume that he possesses authority on the strength of what he already knows rather than seek authority in causes which are still unknown. Experimental evidence indicates that the subtle cause or element inseparable from the driving urge toward general social competition and disorder is traceable to the existence of a factor in man that as yet lies hidden from him. Evidence further indicates that in searching for this hidden factor underlying social competition and conflict our surest clue lies in the field of investigation that has to do with those principles which constitute man's moral and ethical codes.

In his scientific preoccupation thus far man has concerned himself predominantly with investigations into the phenomena of the external world, with the objects and events that exist about him. The present theme relates to phenomena which are subjective and internal. It relates to the results of researches into those feelings and reactions which exist within the organism of man himself and which are the very springs of his conduct. Accordingly, following many years of scientific study of human relations, it proposes what must seem the preposterous view that the commonly accepted sense or sensation of "right and wrong" governing normal behavior is identical with the sense of "right and wrong" governing the behavior of the criminal and the insane, and that this normal standard of evaluation is therefore false and undependable as a measure of human conduct.

Nothing is more important, of course, than the *organic* discrimination between right and wrong. Every animal possesses

[2] Burrow, Trigant, "Physiological Behavior-Reactions in the Individual and the Community," *Psyche* (London), 1930, Vol. XI, pp. 67–81.

an organic acquaintance with the right movement, the right coordination for such and such an effort as contrasted with the coordination or movement that would fail of its goal—the right scent, for example, or the leap that is so finely adjusted as precisely to reach its mark and not exceed it. Such an internal proprioceptive sense of the right act or adjustment is often a matter of the animal's life or death. But man possesses this internal, proprioceptive sense of the right and accurate adjustment no less than the lower animals. Man is quite as well equipped as any other animal to further the needs and to promote the proper care of his organism. In man, however, there has come about an accidental maladjustment in the sphere of his organism's right relation to his environment. He has substituted a secondary, mentally agreed or social picture—a mental image of his organism's correct function or behavior in relation to the external world. And this symbolic, secondarily acquired measure of his organism's precise or faulty adaptation he now knows as the dichotomous image he calls "right and wrong." It is this mishap, this emphasis upon the mental picture rather than upon the organism's internally precise motivation which I shall hope to show is primarily answerable for the phenomena of nervous disorders and crime.

Crime, like insanity, is a disorder of the individual that implicates society at large. The outstanding symptom invariably present in both these disorders is found in the individual's reaction to sensations of right and wrong. As we know, the sensations and reactions embodied in our feelings of right and wrong are expressive of the relationship of individuals to one another through mentally agreed covenants. In the absence of these inter-individual relationships there could be no sensation of right and wrong. The condition is social. To say that the condition is social means that in our human interchange the conformity or fitness we designate mentally by the word "right" represents a correspondence or agreement that is based upon an outer sign or symbol. It means that the accord we designate as "right" rests upon the social system of intercommunication we express in the agreements of language or external code—that it does not rest upon an inherent, biological agreement or organic fitness, as we have come unwittingly to assume, but upon an outer sign, appel-

lation or *mental image* of agreement belonging to man's more recent symbolic, cerebral equipment. So that the confidence or trust in which man's understanding or accord now reposes is based upon a merely external, social or symbolic sense of right rather than upon a sense of biological order and fitness intrinsic to man's organism.[3]

Whether in civilized man or in savage, in the educated or the uneducated, in neurotic or normal, this external sense of right, this symbolic, dissociated criterion of conduct, in whatever form it may exist, governs all our human relationships; it permeates all our thinking and feeling, and the evidences of its pathology press upon us on every hand. Though man prides himself upon his analytic acuity and upon his powers of scientific observation, he has yet to turn about and face the meaning within him of this ever-present social reflex. When a sense of right does not conform to his wishes he does not challenge the social basis of his "right" but, merely shifting to a *seemingly* opposite position, he gives it its other name and calls it "wrong." But it is idle to run to cover with the cry that such and such is "wrong." Wrong is merely the private sense of "right" that one is caught in by a sufficient number of people maintaining a sense of right contrary to one's own.

How uncertain a basis this is, how lacking in scientific criteria and how incompetent man is to reckon with his own blindness in respect to this common measure of mankind called "right," may be seen in the outstanding instance of war. And as with war, with its clash of equally "right" and irreconcilable forces, so with the issues constantly involved in our more intimate social interrelations. For this rightness that exists socially in the normal individual is as fixed and as adamant as the rightness that exists clinically in the self-vindicatory paranoiac. It may no more be argued with in the one than in the other. It is omnipotent and inaccessible.[4]

Let us take a typical case—the situation in which this sense of "right" prevailing in normal society is seen in its acutest phase. A man is being tried in court for a murder committed, let us say, for motives of economic gain. The consensus of the State or com-

[3] See note 6, page 28.
[4] See note 4, page 23.

munity is that the accused (assuming him to be of sound mind) knew clearly what was right and did not do what he clearly knew to be right. In this position at least the community is unanimous. If with a view to his private gain the prisoner committed murder, he did not do what was right. Such is the accepted legal view.

Now in a scientific inquiry any assumption or premise is at least tentatively permissible. And so, laying aside legal, moral, traditional interpretations, let us assume, for the sake of a scientific test, that every individual acts only in accord with what is "right," and that therefore the accused possessed also this sensation or feeling subjectively experienced as a sense of right. Let us assume that at the moment of committing the crime the accused felt his crime to be right, that the economic advantage to himself rendered his act right and justified in his own feeling. This may seem a somewhat novel assumption—the assumption that one does at all times only what is right—but even upon a superficial analysis we shall find it to be by no means as novel as it appears. We shall find that we accept this assumption quite readily where it comports with our own personal interests and their social guarantees. In fact we cannot find more telling instances in which we assume individual conduct to be motivated at all times by a sense of right than in the procedure of the very court in question.

For example, no one would deny that the attorneys on the opposing sides feel themselves to be doing what is right—the one side on behalf of the State, the other on behalf of the defense. But from the standpoint of logic it is obvious that they cannot both be doing what is right, since the two are taking positions that are logically exactly opposite one another. The attorneys for the State experience a sense of right in resorting to every effort to secure the condemnation of the prisoner. With this intent they feel it right to bias the judgment of the jury through rousing their emotions to the highest pitch of indignation, and they do this notwithstanding that it was precisely a bias of judgment due to an emotional over-stimulation that led to the crime of which the prisoner stands accused. On the other hand, the attorneys for the accused are inspired by an equal sense of right and, in their efforts to present arguments in his defense that will incite the jury to a favorable verdict, they seek quite as deliberately to stimulate

the court to the highest point of emotional "sympathy" and partisanship.

Or suppose we assume that there is doubt whether the prisoner is of sound mind—that the case is one in which the defense bases its plea upon insanity. In this circumstance we have the not uncommon situation in which eminent psychiatrists of equal experience and training are presented with identical clinical material, and yet, of these able, sincere and representative men, each group will hold an entirely opposite opinion from the other in regard to the data before them, and this opinion will, on each side, be based equally upon its sense of "right." For one group will "swear" and bring their utmost scientific resources to prove that by every known criterion of science the man is sane; the other group, equally gifted and likewise of the highest integrity, will reconcile it with their sense of right to present a completely contrary opinion.[5]

It is clear, then, that both attorneys and psychiatrists may possess a definite sense of right and yet this sense of right may afford no guarantee of a scientific basis of judgment. Now if legal experts and recognized psychiatric authorities may have this sense of right and yet lack a consistent stabilized criterion of procedure in their own special fields, if they may preserve a sense of right and yet not be dependable in their professional judgment, is it not to be expected that the accused, who is but a layman, might well have a sense of right also and yet not be dependable in his judgment?

What then *is* this sensation of right that is so prevalent among us socially? Could it be that the sensation of right about which we hear so much and which is the basis of our education, of religion, of law, of our ethics, economics, sociology and philosophy —could it be that this sensation of right, as we now experience it, is after all merely one's private economic advantage? Could it be that, despite all our palaver, inter-individual and international, my sense of right is really one with and inseparable from my sense of gain? In the case of the murderer his sense of right was admittedly aligned with his economic advantage. But it is noteworthy that with the attorneys as with the psychiatrists in the

[5] Gault, R. H., *Criminology*, Boston, D. C. Heath & Company, 1932, p. 401.

case, their sense of right is also definitely on the side of their economic interest. Those whom the State pays see the case with the eyes of the State; that is, their sense of right and that of the State correspond *in toto*. While with the lawyers and the psychiatrists for the defense, their sense of right lies also entirely on the side from which their fee is to be derived.

It would be absurd to say that men of the highest professional standing in medicine and the law have testified falsely; that, because of the monetary gain to themselves, they have spoken contrary to their sense of right—to what they believe to be true. On the contrary, they have spoken precisely out of their sense of right. That is my whole point: that where one's advantage, one's economic gain lies, there lies also one's sense or sensation of right; that what is called "right" and one's private advantage are one and the same thing. Of course this external image of private gain may be entirely unconnected with any "material" profit. As often as not this image of one's external right is associated with an abrogation of one's obvious gain. As often as not it is a mark of "sacrifice" rather than of acquisition. One need only consider the sort of thing that people, commonly revered in the family circle or in the wider community as "unselfish," carry off for their private consumption under this form of image booty. But under whatsoever exterior guise it may appear, it is the *image* of gain of which I am speaking. It is this image that besets the path and prompts the course of both attorney and psychiatrist, for this secret image of private gain is everywhere paramount. Now if we do not penalize but on the contrary place a premium upon this wholly ulterior gain or sensation called "right" as it is represented socially in the legal and in the scientific expert with all their professional background of education and culture, what must be thought of our own sense of right as a State or community when we apply a different criterion to the sense of right as it is entertained by the so-called criminal individual when in pursuit of *his* private advantage? [6]

[6] A study in retrospect by Frederick A. Fenning, which appeared in *The American Journal of Psychiatry* for July, 1933, gives an interesting summary of the trial of Charles A. Guiteau who, in 1881, assassinated President Garfield. He was later convicted and hanged for the crime. In considering the arguments of the defense and the prosecution even in this very brief summary of Mr. Fenning's,

This question has arisen not as a personal, philosophical or moral issue but as the result of a medical and biological inquiry into the processes determining human relations. It is part of an inquiry in phylopathology which occupied many years of research into the nature of those behavior-reactions which I first had occasion to observe as they occur in nervous and mental patients.[7] Our earlier experimental studies of these inter-individual reactions made plain, as I have said, that crime and neurosis, as they occur in the individual, implicate society at large, that what applies to the negative response of the neurotic with his unbalanced reactions based upon sensations of right and wrong applies also to the positive response of the criminal with his equally arbitrary and unstabilized sensations of right and wrong. With the progress of our investigations the social implications of these studies became more and more inescapable. Indeed continued studies forced the conclusion that these social implications were of major importance in our clinical inquiries, demanding the inclusion of normal social groups as an essential part of the material under investigation.[8]

In general terms the concluding evidence of these studies established a basic connection between spheres of human activity which in their superficial manifestations have always seemed wholly unrelated, notably, as has been said, between the sphere of man's economic interests and the sphere of his moral or ethical life. Economic interest as a self-advantageous aim, the identity of

it becomes evident that the weight of opinion to-day would be very different from what it was then. The author expresses appreciation of our greater knowledge of dynamic causations at the present time, thanks to Freud, and remarks how different the verdict in this case would have been, due to our added knowledge. In other words, our "right" opinion to-day would controvert completely our "right" opinion of a few decades ago. But what would seem really to require adjustment is this mentally right attitude of the individual and of the community, with its ever shifting and inconstant determinants. It is these inconsistencies in our court procedure that point clearly to the need of attaining a stabilized, scientific criterion which would eliminate such haphazard verdicts as rest upon the "right" opinion either of the individual or the group.

[7] Burrow, Trigant, "So-called 'Normal' Social Relationships Expressed in the Individual and the Group," *The American Journal of Psychiatry,* 1930, Vol. X, pp. 101–116.

[8] Syz, Hans, "On a Social Approach to Neurotic Conditions," *Journal of Nervous and Mental Disease,* 1927, Vol. 66, pp. 601–615.

"Remarks on Group Analysis," *The American Journal of Psychiatry,* 1928, Vol. VIII, pp. 141–148.

competition and morality, or the feeling-synonymity between might and right, were established experimentally as conditions that are as characteristic of the neurotic "invalid" as of the "criminal," and these same parities were found to exist side by side also in the so-called normal personality. These social implications are further supported by the etymological testimony of the folk consciousness where we find that equity in respect to property (competitive claim) and equity in respect to morality (competitive conduct) are both expressed by the term or symbol "right."[9] From experiments made with reactions as they occur in social groups it is possible to trace the connection between this wholly external code or sense of "right" and the basic disorder lying back of it. Laboratory inquiry into the reactions of individuals socially has shown that such a divisive community expression as is presented in the court room is typical of our community or social attitude throughout society generally, and that the sense of right commonly involved in our social interchange represents a standard that is purely imaginal, symbolic and therefore organically fictitious.[10] It has shown that this sense of right is external, that it has nothing to do with the inherent biological fitness of the organism as a functioning whole and that when applied to the tangible, biological processes underlying human behavior, it proves to be a purely arbitrary and uncontrollable unit of measure.[11] As Mr. Sokolsky says:

"As there are in the United States a New England sense of right and a Middle-Western sense of right, a Wall Street sense of right and a Western Coast sense of right, who can know which of these will predominate at any given moment? Is Mr. Stimson right when he hooks us into the League, or Senator Borah when he keeps us out of it? Is Mr. Baker right when he would boycott Japan, or Mr. Lindsay Russell

[9] Compare "I *am* right" and "I *have* a right." Morality and acquisition disclose a common denominator also in the etymological identity of the words "good" and "goods." Consider German, *gut* and *Güter;* and French, *bien* and *biens;* also the proprietary implication in the economic term "bonus," meaning good, that has been taken over directly from the Latin. The phrase "all to the good" in which "good" means gain or attainment is equally to the point.

[10] Consider such socially "right" alternatives as Jew and Gentile, Catholic and Protestant, or the equally poignant contrast between Democrat and Republican.

[11] Galt, William, *Phyloanalysis—A Study in the Group or Phyletic Method of Behaviour-Analysis,* Psyche Miniature Series, London, Kegan Paul, Trench, Trubner & Company, 1933.

when he would trade with Japan? Is Mr. Hearst right when he would collect the last sou of the war debt, or Mr. Hoover, whose emissaries conversed with European diplomats in the hills and woods and paths of Lausanne informally about the prospects of cancellation?

"This is not mere difference of opinion among honorable gentlemen; it is the natural confusion arising from the pursuit of policy which has no grounding in fact, no relationship to reality, no specific and definable aim, which is concerned only with the philosophic and undiplomatic concept of the 'good.' " [12]

The condition of self-contradiction observable in the court room, then, is not a localized or isolated condition. It is not specific to this or that particular setting or circumstance. Neither is it a primarily superficial condition. It is one that is generic and *internal.* By this I mean that it is a condition that indicates an intrinsic modification within the organism as a race. In its quest for a remedy, therefore, the race must turn to its own organism, to a study of its own internal processes—not this person to that one, or this class to that class, or this nation to some other nation, nor all nations to a League of Nations busied, as it is, only with external, diplomatic,"mental" interrelations; but the nations as a whole need turn to a disorder which is internal to man as a species. They need as a whole to regard this self-contradiction embodied in our moralistic dichotomy of right and wrong as marking an anomaly of development that is resident in man's own intrinsic processes precisely as we have learned to regard tuberculosis or other pathogenic infections as community disorders involving structural changes in the general community tissue.

There has always been much speculation regarding the behavior of man, both external and "introspective," individual and collective, and it has concerned itself in no small measure with those social interrelations which are governed by man's sensations of right and wrong. But laboratory experimentation has shown that the sensations which exist among us as "right" and "wrong" are, with the aid of a suitable technique, perceptible as the expression of definite physiological strains and tensions within the organism of man as a totality, just as sensations of pressure, pain or hunger

[12] Sokolsky, George E., "The American Monkey Wrench," *The Atlantic Monthly,* December, 1932.

are the expression of physiological reactions perceptible within the organism of the single individual.

On the basis of the present thesis, "the organism of man as a totality" refers to a principle of continuity that is organismic, that extends throughout the phylum as a functionally unbroken continuum. It posits a substrate of feeling that is unitary throughout this organically phyletic whole. From this basis it regards the elements symbolized socially as "you" and "me" as denoting a purely external, appellative distinction. This "you" *versus* "me" is not a basic, not an intrinsic distinction integral to the organism's physiological tissues and functions. Obviously, between you (John) and me (James) there is a legitimate social or symbolic distinction, but within the basic feeling-life of this "you" and this "me" there is not primarily this distinction.[13] This distinction has been falsely inferred secondarily from the mental or appellative differentiation through which John and James are symbolized by us. The empathic or feeling distinction that has artificially crept into and colored the external distinction between John and James is found to be identical with the empathic fallacy embodied in the feeling of right and wrong. These parallel contrasts are synonymous. It is always *I* who am right; it is always *you* who are wrong.[14] The unfailing rightness of John (or James) when John (or James) is I; the unfailing wrongness of John (or James) when John (or James) is you, is an observation whose constancy has been clearly established as resting upon tensions and modifications internal to the organism as they are presented in the reactions occurring among individuals in normal social groups. It is the finding of such experimentation, when applied to sensations and feelings common to the species, that this physiological aberration in tensions and strains existing inter-individually within the phylum is traceable to a definite distortion in the process of attention and that this distortion has occurred in the course of man's mental evolution as a species.

[13] As Wilhelm von Humboldt said: "Im Ich ist von selbst auch das Du gegeben."

[14] Burrow, Trigant, "The Reabsorbed Affect and its Elimination," *The British Journal of Medical Psychology,* 1926, Vol. 6, pp. 209–218.

"The Autonomy of the 'I' from the Standpoint of Group Analysis," *Psyche* (London), 1928, Vol. VIII, pp. 35–50.

The experiments to which I refer bear upon special studies in the physiology of "interest" or attention regarded as a racial process. They refer in particular to the alteration in the attentive processes which are associated with the over-specialization of the function of the external cranial senses concurrent with the evolution of man as a social animal and coincident with his invention of language and ideation. With this specific neural innovation in the process of man's bionomic relation to the external environment, certain marked changes have been occasioned in his adaptation and development socially, and these changes affect the feeling-life of the organism in a manner which closely relates them to the cause of such community phenomena as crime and neurosis. Careful inquiry shows that due to this racial deflection of attention there does not yet exist among us a subjectively dependable basis of social integrity, that the moral or external behavior-reactions of individuals to one another socially are throughout determined solely by the arbitrary measure of right represented in one's personal advantage, and that our external standards of right and wrong called "normal" do not therefore represent a trustworthy, scientific criterion of human behavior. Indeed it is not too harsh to say that the reason people cherish above all things this external symbol or formulation called morality is that this symbol or formulation called morality is of all things the most readily alterable according to each individual's private right or gain.[15]

If then both neurosis and trespass, insanity and crime, are the direct reflection, socially, of the physiological tensions and strains that lie back of our normal standards of right and wrong, we are reversing the direction of scientific inquiry when we seek to investigate the *social symptom* expressed in crime (whether neurotically "repressed" or actually "committed") rather than *the disturbed physiological tensions which underlie our normal standards of right and wrong*. For, as I have said, this element of rightness exists not only in the criminal and the neurotic, but there is evidence that every man at all times does what is "right." What one sees to be one's private advantage at the moment, whether it

[15] Burrow, Trigant, "Our Mass Neurosis," *The Psychological Bulletin*, 1926, Vol. 23, pp. 305–312.

consist in committing an act or in refraining from it, is always governed by one's sense of right.

It cannot be too strongly emphasized that the condition is not isolated, local or sporadic, but that it is social. This situation clearly indicates the urgent need that society as a social organism prepare itself to take fresh inventory of its own processes. That which society has greatest need to face is precisely that which society is most strongly bent upon not facing. Society fails to face the fact that the two least understood classes of individuals within its structure, namely, the neurotic and the criminal, are precisely the classes who, of all people, are the most obstinately "right," and society fails to reckon with these two most right extremes because these two most right extremes are an expression of the secret "rightness" existing within the social processes of society itself.

Students of human behavior have quite generally overlooked the invariable concurrence in one and the same individual of both socially delinquent and insane trends. They have also failed to recognize how many definitely insane persons there are who have never enacted a delusion, or how many persons of marked criminal trends who have never committed a crime. This is why so many insane persons to-day are occupying cells in prisons and why so many delinquents are confined in hospitals for the insane. Incidentally it is also the reason why so many of both these types of personality are moving about "normally" in our midst unsuspected of either trend. But the community, with its presumable quota of "normal" individuals, will not be competent to cope consistently with either insanity or crime until the community has recognized to what extent it combines in its own sense of "right" the germs of both these disorders.

As in the court room, so throughout the structure of society generally there are, then, these two opposed extremes, these two mutually opposed and competitive forces of "right," and both are at all times equally right. These two forces do not represent a "psychic duality of personality" either in the individual, as we have been taught, or in society; they reflect a divisive element within the organism of man himself. The present conflict between law and order and the underworld forces of crime is a world-

wide conflict and it expresses this basic condition of division within man's physiology as a species.[16] As with the individual, so with the community, it is futile to cry that one side is wrong. "Wrong" is only what the other side says. It is the reflex rejoinder of rightness in its obsessive effort to be righter still. The leaders in the industries of crime have as rigid a sense of right as the proponents of law and order. They too have their "given word" and covenants, their ideals of private gain and personal advantage. They too have their ethical symbols and codes, their corresponding ceremonials and pseudo-religious observances, and these rituals are no less pious nor ostentatious in *their* social group than these same insignia of rightness expressed by the leaders of our wider social communities. The inadequacy is not in the one group as contrasted with the other, but equally in the attitude of each. The reactions of both are external, mental, divisive. Each is "right" in contrast to the other who is "wrong." Both represent superficial behavior-adjustments which reflect an identical behavior-code of rightness. Both reflect a divisive social norm which in turn finds its expression in war and in general economic and industrial instability. Both reactions, however, as later pages will attempt to show, are secondary to a distortion of those basic physiological processes whose bionomic function it is to regulate the attention and adaptation of man as a unitary organism.

Like the conflict in the court room or the conflict in the neurotic, the conflict between these two equally competitive and equally moral behavior-expressions exists because each party is too obsessed with its own *symbolic* sense of "right"—a right, incidentally, that is related equally to property and to propriety[17]—to permit the generic community consciousness, which these two forces now dominate, to be aware of its own basic disturbance. Being thus unwittingly opposed to any investigation into the nature of the real disturbance, these two competitive interests cannot permit the processes responsible for the external symptoms

[16] Burrow, Trigant, "The Physiological Basis of Neurosis and Dream," *Journal of Social Psychology*, 1930, Vol. I, pp. 48–65.

[17] In the philological parallel between property and propriety which have their common root in the Latin word *proprius*, meaning one's own, we may see again the close alliance between man's ethical and his economic values. (Cf. Note 9, p. 53.)

of social conflict, now represented in neurosis, crime and war, to be traced to their biological source within man's own structure.

If, therefore, what is called "criminal" may be traced to an element in human behavior that is inseparable from this physiologically spurious sensation reflected inter-individually in the sense of "what is right"; if, in short, the quality called criminal or neurotic is inherent in the artificial social process constitutive of normal behavior, the elaborate systems for controlling human conduct which come under the head of educational training, legal psychology, sociology and criminology cannot hope, on their present basis, to achieve anything of real constructive value to the State or to the community.[18]

Right people do not welcome the inroads upon their rightness that my position seems to threaten, for the habit of rightness is very subtle in maintaining its sense of right. But this inveterate habit of rightness often leaps to conclusions that are without warrant. It sees the inimical and the menacing where no menace exists. We are all so habitually right, and we have all been so secure for endless centuries in our unsuspected rightness that anything which seems to challenge its preëminence is not easily condoned by us. But, far from detracting from the individual's integrity of adjustment and from his clear coördination as a social organism, my aim is to bring the stronger support to this integrity by removing the outer *semblances* of integrity that have come to exist in the form of mere symbols of right. My aim is not to take away from but to add to man's sense of the full dignity innate in his interrelational values and in their social constructiveness.

Perhaps the gist of my thesis will be made clearer if I may put the conception I have in mind in more intimate, concrete form, however far afield it may momentarily lead us from considera-

[18] "We find it impossible comprehensively to discuss the causes of crime or factors in nonobservance of law. Criminology is remaking, the social sciences are in transition, and the foundations of behavior are in dispute. It would serve no useful purpose to put forth theories as to criminality or nonobservance of law, either generally or in America, on the basis of some one current psychology or social philosophy, with the certainty that it represents but one phase of the thought of the time and will not long hold the ground. For the same reasons it would be quite as useless to develop the potentialities of each of the current theories." National Commission on Law Observance and Enforcement, *Report on the Causes of Crime,* U. S. Government Printing Office, Washington, 1931, Vol. I, p. vii.

tions of general biological principles. Let us suppose that a boy loves his mother deeply and that he shows her always only the tenderest consideration. Such an attitude on the boy's part would appear to any one as quite natural and wholesome. It would seem as spontaneous and healthy as breathing or as interest in play. But if, on the contrary, the boy felt that love and tenderness toward his mother were something he ought to show her because it would look well or be "right," that it would seem to other people the dutiful and worthy expression of a son, one would regard such a basis of feeling as most unwholesome and unbeautiful. This of course, I realize, is the extreme case.

Now what I am trying to say is that in the process of his evolution social precept has shifted man's spontaneous efferent attention from its primary centre of interest and activation, and has converted it into a mere secondary, self-infolded *image* of interest and activation. This displacement impinges upon and sullies natural, unpremeditated feeling, and under the circumstances there occurs a distortion or *faux pas* in man's growth that is unhealthy and unbiological. It is like the love of a boy for his mother that has become premeditated and self-conscious. If this replacement of the spontaneous by the ulterior is traceable to a miscarriage in the intrinsic processes of man's biology—to a mishap in our growth that is accessible to objective observation and that may be alterable—it would seem worth while to set about locating the difficulty and applying the appropriate remedy.

As a matter of fact it has been the evidence of just such ulterior calculations and their influence in muddying the course of unity and integration in man's behavior that gives meaning and incentive to the present study. Man's feeling is prompted primarily by a principle of unity and integration, and this harmonious principle has its biological prototype in the very structure and function of man's own organism. Throughout the many years I have devoted to medical and psychological studies nothing has so impressed me as the consistent effort of the organism to preserve the primary unity that underlies all living processes. The close physiological union between the organism of the mother and the infant, and the organism's intolerance of an undue interruption to this union—its wholesome biological intolerance of an organic

separation in feeling and thought—represent tendencies to which the ulterior and privately motivated expressions we have substituted symbolically as "right" and "wrong," as "you" and "me," stand in sharp, artificial contrast.

When we consider some of the things we do to one another, as a family, a community or a nation, under the sponsorship of this social password "right," it should not be difficult (provided we ourselves are not too "right" about it) to realize the compulsive, pathological nature of this wide-spread system of self-vindication or rightness. Under its aegis we accept throughout the world systems of government which periodically send out young men by the hundreds of thousands to kill or maim one another. It is under the sponsorship of what is "right" that children are placed in factories where they must work for twelve hours a day, often engaged in supplementing the operation of machinery which subjects them to frequent and permanent injuries. We authorize a penal system under which an offender may be tortured and sometimes even beaten to death by his apprehenders before there is an opportunity of his being brought before the court, and we voice no concerted protest against a policy of legal diplomacy that secretly silences in the community any move toward the investigation of such violations. Under this same system prisoners are subjected to years of brutal treatment and abuse at the hands of prison guards specially chosen because of their record as hard-boiled disciplinarians. In our "right" notions as to the correct procedure for instilling a sense of what is "right" into the unfortunate delinquent, and in order to make sure that he shall adequately expiate his offense and "learn his lesson," we do not shrink from placing a man in solitary confinement for a period covering many years! What must be the slow agony of the gradual disintegrating influence upon the human organism resulting from the imposition upon it of such biologically abnormal conditions, none of us accustomed to walk in the free air can even dimly conceive. Only lately the newspapers reported two instances in which prisoners had experienced this form of persecution at the hands of our widely organized social Mafia for engendering in the community a sense of what is "right." One of them implored the court for a sentence of death or life imprison-

ment rather than risk being returned again to the horrors of solitary confinement as enforced in his own State from which there was a demand for him. Incidentally, the other prisoner in explaining to the court the actions which had led to his arrest, ventured to remark that "None of us is entirely sane," and added, "You yourself, your Honor, probably are not entirely sane!" [19]

The social tension entailed in the aberrations of sensation symbolized as "right and wrong" and their demonstrable physiological basis are of significance, therefore, not only to the field of medicine and biology but also in their bearing upon sociology, criminology, economics and the law.[20] As long as we preserve as a presumably dependable measure of human conduct this illusive and variable sense of right that is now the basis of our social and political acquisitiveness, of our economic and industrial competition, of our personal and national greeds, it is not possible to bring to the regulation and adjustment of human affairs the scientific stability of a tested and controlled criterion. Until we have applied in the sphere of our human processes a technique of observation identical with that prevailing in the laboratories of structural biology elsewhere, it is not possible for man to restore the basic health of function natural to his organism as an integral racial process.

In September 1932 the representatives of forty-six nations gathered in London for the purpose of a World Economic Conference. From the reports of its proceedings, nothing could more faithfully have reproduced the reflex pattern of social interreactions which my associates and I have observed objectively under the controlled conditions of inquiry offered in the laboratory of phylopathology. Each representative inevitably voiced only *his* point of view—the "right" or advantage of *his* nation or interest. So that, in reviewing the personal and social currents that prevail in such international parleys, evidence would seem to point to the

[19] *New York Herald Tribune,* July 16, 1932, and *The New York Times,* November 29, 1932.

[20] If any one supposes that the social condition represented in the law is something remote or casual in the life of the individual, he is counseled to read Judge Joseph N. Ulman's *The Judge Takes the Stand* (New York, Alfred A. Knopf, 1933).

existence of the same obstacle to an understanding among nations as exists among individuals. For as we consider the underlying mood that characterizes our world conferences, it would seem that nations too, as well as individuals, however earnest and well-meaning they may be, are inevitably balked in their need to reach an organic agreement among them. The impasse we found existing in the private advantage secretly disguised and preserved in the arbitrary right of the individual apparently exists also among aggregates of individuals and defeats no less their efforts to reach a sound and stabilized basis of intercommunication. Like tuberculosis or insanity, this ineptness of accord is an anomaly affecting the species in its innermost processes, and physiological processes which are internal to us cannot be reached and altered by external argument or covenant.

Life with us now is so much more a matter of adjusting the symbols that *represent* conduct than an expression of the biological processes that *are* conduct. We are so much more concerned with problems of understanding than with problems of behavior—with problems that attempt to cope with behavior as a mental picture or concept rather than with behavior itself. But behavior is a problem of the total organism which no localized, picture-forming function or mental part of the organism is competent to resolve. Physiological unity and health are primary and basic to the race. The accident that has induced in man a divisive and competitive element as reflected in the external image of right and wrong, and that has split the feeling or interest of the integral social body into as many parts as there are individuals or groups of individuals composing the species, is but a temporary *faux pas*—a lapse of development in the course of our growth as conscious creative organisms. However prevalent, however powerful socially may be our sense of right as a sense of purely personal, private, segregated interests, there is within the race an equally powerful biological trend that makes for a healthy, whole and impartial adaptation among us. There is within man's physiological organism as a race a basic health or fitness that cannot be wholly extinguished—a health or fitness in contrast with which this external symbol called "right" with all its attending pathol-

ogy may be recognized as a false and uneconomic substitution.[21]

Sociological students who have their ear to the ground are not unaware of the relatively swift alterations which are taking place to-day within the structure of society from the point of view of *man's essential feeling-processes.*[22] Anxious and socially "depressed" as recent years have found us, our need is the robust summoning of man's maturer powers of observation. Not comfort and the familiar shift from depression to its illusive opposite in the futile alternative of elation, but a square confronting of the deeper biological actualities that underlie the surface appearances. These actualities now wholly subjective and internal to man need to be made objective and demonstrable. Our accustomed external

[21] The first portion of Kropotkin's too little known work, *Mutual Aid* (Kropotkin, P., *Mutual Aid, A Factor of Evolution,* New York, Alfred A. Knopf, 1921) gives an excellent account of the principle of organic consistency uniting and motivating the individuals of an animal species into an integral, organismic whole. But the second half distinctly falls away in its artificial attempt to relate this biological principle of unity evidenced in animals to the quite sentimental and self-conscious expressions of "unity" that characterize civilized communities of man. In the author's effort to affiliate our widely systematized charities or the helpful community services of the social worker with the manifestations of this biological principle of mutual aid, his thesis is largely vitiated.

Heard gives evidence from various anthropological and other sources of this same organic principle as it expresses itself in primitive peoples and indicates the "complete group identity" that underlies their motivations, individual and social.

Heard, Gerald, *The Ascent of Humanity, An Essay on The Evolution of Civilization,* New York, Harcourt, Brace & Co., 1929, p. 60.

More recently Allee has offered experimental data demonstrating the principle of biological unity inherent in animal species.

Allee, W. C., *Animal Aggregations: A Study in General Sociology,* Chicago, University of Chicago Press, 1931.

[22] Bernard, L. L., *An Introduction to Social Psychology,* New York, Henry Holt & Co., 1926.

Park, R. E. and Burgess, E. W., *Introduction to the Science of Sociology,* Chicago, The University of Chicago Press, 1927.

Reuter, E. B., "The Problem of Sociology," *Sociology and Social Research,* 1928, Vol. 13, pp. 119–132.

Sorokin, Pitirim, *Contemporary Sociological Theories,* New York and London, Harper & Brothers, 1928.

Bain, Read, "The Concept of Complexity in Sociology," *Social Forces,* 1930, Vol. 8, pp. 369–378.

Groves, E. R., *Sociology,* Philadelphia and London, J. B. Lippincott Co., 1931.

MacIver, R. M., *Society, Its Structure and Changes,* New York, Ray Long and Richard R. Smith, Inc., 1931.

Eliot, T. D., "Contributions of Sociological Analysis to the Understanding of Personality," *Social Forces,* 1934, Vol. 12, pp. 490–497.

Znaniecki, Florian W., *The Method of Sociology,* New York, Farrar & Rinehart, 1934.

Young, Kimball, *Source Book for Sociology,* New York, American Book Co., 1935.

sense of right, our pet habits of thinking and feeling based upon what is *called* or *symbolized* as "right," notwithstanding their age-long impetus and their wide-spread social distribution, are but a subjective habituation and constitute no guide to the clear course of behavior-reconstruction that lies before us.

Man, as we have noted, has always been enamored of the obvious, and in our deference to the obvious we are, in these times of world-strife, more than ever constrained by our limited and limiting habituations to overlook the possibility of a basic racial health. We tend to overlook the fact that life was not originally "mental," that for unreckoned ages man, or his biological predecessor, negotiated his world of experience without the interpolation of the cerebral symbol or of language. We forget that before the invention of this code of selective signs and symbols through which a mentally segregated feature or part is made to stand as a sign for the whole, there existed for man as a total organism the total object and its relations. This process as a whole engaged the feeling of the organism as a whole. Morality and division had not yet entered into man's organism and caused discord and dissension within its intrinsic feeling-life. Truth, as a *mental concept* had not taken possession and usurped control of man's behavior.[23] In the process, however, of our mental or social evolution with its gradual interpolation of the segregated part or miniature segment of behavior—with our attainment of an external, symbolic knowledge of good and evil, or with our acquirement of a "sense of right"—there has occurred a conflict at the very heart of man's feeling. It is this irreconcilable anomaly in the process of man's growth that is answerable for the deflection of his total and unified attention as a social organism and the consequent substitution of a *social image of rightness* for the integral functioning of man as a phyletically organized unit.

[23] For evidence of the etymological synonymity between *sin* and *truth* see paper by the author, "The Origin of the Incest-Awe," *The Psychoanalytic Review*, 1918, Vol. V, p. 250.

CHAPTER IV

THE PRECONSCIOUS, OR FOUNDATIONS IN HUMAN BIOLOGY

CONTINUING our consideration of the factor of symptomatology I should now like to indicate a field of symbolic manifestation that is symptomatic of a basic physiological principle of unity within the organism—a principle of unity or of physiological accord whose outer reflections became evident to me in the earliest period of my psychoanalytic observations. In accord with these observations I shall now endeavor to indicate how, through the undue interpolation of those symbolic processes of mentation that characterize the organism's projective, linguistic function, there occurred a breach in the organism's physiological basis of continuity that seriously impaired its original behavior-consistency. I shall try to show how, through this breach, there was artificially set up a secondary, symbolic authority that stands definitely opposed to the primary authority of the organism as a physiological whole. This gratuitous, unauthorized basis of behavior coincident with the accidental over-emphasis upon an outer, symbolic mode of adaptation or behavior-consistency is a phenomenon which we have accepted all too naively. We have not realized the extent to which it has imposed a merely external, symbolic authority over man's processes, both individual and social. Being now compelled through this inadvertence of adaptation to assume an outer mental conformity, or to "believe in" something, however remote, that may best support this vicarious expression of the organism's physiological unity and consistency —whether existing under the guise of an Oriental mysticism or of our organized Western fact-sense—we have become unconscionably jealous in preserving the status of these accustomed beliefs

and conformities as they bear upon the mere *idea* or *symbol* of unity and accord. In this situation I realize only too well that to presume to question our established symbolic criteria of inter-individual adjustment is a hazardous enterprise. It is to appear as a ruthless aggressor bent upon stripping a deserving community of its rightful heritage to social happiness and security. It is to seem cynical toward those most deeply dedicated efforts of man which, notwithstanding that they maintain a merely external consistency, have thus far preserved and safeguarded his continuance as a race. But, far from wishing to bring disquiet either upon the individual or the community, far from questioning the native sources of human consonance and integrity, my effort is to point rather to the existence of a far deeper consistency, a far more basic coördination and fitness. It is to point to a sounder prerogative, a more organic authority, a fuller right, if you will, than is merely symbolized in our private pictures of agreement, security and self-assurance—a right or prerogative that is innate to the organism of man as a basic and permanent biological principle.

It is fruitless, however, according to my observations, to try to indicate this deeper prerogative, this more organic consistency, without indicating at the same time the inadequacy of those symbolic criteria of human behavior that now block access to and hinder the emergence of this prerogative. For conflict is represented not only in our obvious social discord and competitiveness; it is represented no less in our seemingly equable standards of good-will and accord. But while this conflict inherent in these two contrasting manifestations has its counterpart in a definite physiological conflict, beneath these conflicting physiological patterns there is, as I said, a basic physiological consistency. In the present chapter I shall attempt to outline both this basic consistency and the symbolic symptomatology that corresponds to it. The reader will understand, though, that these considerations are not final. They represent, as I have said, but an introduction to subsequent observations as they will be presented in later chapters.

Those of us who have been accustomed to devote hours each day to the analysis and interpretation of the dreams of neurotic patients or the phantasies of psychotic personalities have been

witness, however unclearly, to the superficial conflict of emotions represented in the social dichotomy of right and wrong as it occurs in its acutest phase—the restless imbalance and antithesis of function instinct in "my advantage" versus "my disadvantage." For the habit of adjusting one's behavior with respect to one's outer social appearance—the fear to be "bad" in contrast to being "good"—is always prompted by the fear of what will be thought of "me." The retributive consequences of "naughtiness" are implicit in the very intonation of the word. It places the personal consideration of what will happen to "me" above what is basic, consistent and in physiological agreement with my organism. However "normal," however habitual socially this reaction may be, it constitutes a neurotic basis of conduct and a false and artificial motivation to the organism's behavior. Freud, who first discovered in the dreams of his patients this persistent effort of the individual to secure his personal satisfaction at any cost, contributed to the human arts a psychological discovery that ranks second to none in its social and cultural importance. It is to this trend that Freud aptly gave the name of "wish-fulfillment." [1]

In the phylobiological studies of my associates and myself—studies which have included not only psychoneurotic patients but normal individuals as well—it was found that the latent, repressed wish aligns itself always with the individual's "wrongness," while the overt, social wish affiliates itself with his "goodness"; and that the individual's "resistances," of whatever nature, are invariably arraigned upon the side that happens momentarily to be in the ascendancy or against the invitations that appear to offer less assurance of gratification and success. But, though not commonly recognized, an analysis of the symptom-complex expressed in the "normal" or socially adapted type of personality indicates no less conflict and impasse than is found in the neurotic or psychotic patient; and, when it comes to a test, there is found no difference between them as regards the terms assigned or the stakes awarded.[2] For the fuller appreciation, therefore, of a right that is deeper than one's personal prerogative or fanciful self-advan-

[1] Freud, Sigmund, *Die Traumdeutung,* Leipzig und Wien, Franz Deuticke, 1900.

[2] Page, James, Landis, Carney, and Katz, S. E., "Schizophrenic Traits in the Functional Psychoses and in Normal Individuals," *The American Journal of Psychiatry,* 1934, Vol. XIII, pp. 1213–1225.

tage, one must come to sense the neurosis not only in its individual but also in its generic significance.

With this in mind it may be well to mention the circumstance that the position represented in this book had its inception in certain early observations that were first assembled in the form of a paper I called "The Preconscious or the Nest Instinct." [3] The original paper was subsequently expanded into a book, but neither the paper nor the book has ever been published for the reason that the combination of study-methods then available and employed were not adapted to an adequate correlation of the data in hand. In consequence, the material had to be set aside for the time in order to await the investigation of still other conditions that stood in the way of a sound development of those elements—sociological, physiological and biological—which were inseparable from my thesis of the preconscious. In other words, the material itself dictated a venture into new and uncharted fields. The thesis, however, has not for a moment been discarded. Even in those early days, with what assistance the current methods of psychology and psychiatry afforded, it was followed up and partially developed in such papers as "Character and the Neuroses," [4] "The Genesis and Meaning of 'Homosexuality,'" [5] and in "The Origin of the Incest-Awe." [6] So that these early statements, together with the original thesis of the preconscious, represent the beginning of a consistent effort which, with the assistance of my coworkers, has led step by step through years of research to the position presented in this volume. In view of the continuity of these investigations the present chapter will outline in modified form the substance of this early study of the preconscious, the culmination of which will be presented in later chapters.

When I spoke in Chapter Two of a basic motivation not com-

[3] Burrow, Trigant, "The Preconscious or the Nest Instinct—A Genetic Study Based on the Dynamic Psychology of Freud." Read at the Seventh Annual Meeting of The American Psychoanalytic Association, Boston, May 25, 1917.

[4] Burrow, Trigant, "Character and the Neuroses," *The Psychoanalytic Review,* 1914, Vol. I, pp. 121–128.

[5] Burrow, Trigant, "The Genesis and Meaning of 'Homosexuality' and its Relation to the Problem of Introverted Mental States," *The Psychoanalytic Review,* 1917, Vol. 4, pp. 272–284.

[6] See note 7, page 32. See also the author's "Notes with Reference to Freud, Jung and Adler," *The Journal of Abnormal Psychology,* 1917, Vol. XII, pp. 161–167.

monly reckoned with among man's accepted behavior-incentives, I was referring to those early intimations of a basic and unified premise of motivation that I had gathered from different spheres of man's individual and social life in my study, "The Preconscious or the Nest Instinct." I should like now to review these intimations very briefly and yet in sufficient scope to indicate not only the symptomatology that reflects the organism's basic unity, but also the consistency and continuity between these early observations and their later development as presented in this work.

In reckoning with the striving of the self versus other selves it is not difficult to apply Freud's interpretation of the affective, sexual relationship of the individual in respect to other individuals, nor to recognize the invariable mental record or the symbolic form of *re*-presentation characteristic of this sphere.[7] But there is evidence that there exists also a pre-affective or pre-sexual sphere of consciousness—an early preconscious mode of awareness that precedes the inter-individual or transference phase of "normal" or psychoneurotic adaptation—and that with this preconscious mode there have likewise come to be associated symbols that are specific to this early sensory phase of the individual's experience.

As the reader will recognize, however, from the examples to follow, the symbols expressive of the preconscious mode are by no means sharply demarcated from those of the later divisive or unconscious mode. This is to be expected. For, as we shall later attempt to show, there is nowhere in man's present conscious behavior evidence of any clear demarcation between those first physiological activities of the organism that are expressive of unity and integration, and the striving, divisive or so-called sexual reactions which gradually come to characterize the organism's later behavior. Accordingly, in the field of our outer symptomatology these two trends—the unitary and the divisive—not infrequently exist side by side in constituting what we experience as our every-day moods; or they may converge to form a single symbolic narrative, whether occurring in legend, dream, charade or allegory. It is only in the later chapters, however, that the signifi-

[7] Burrow, Trigant, "Psychoanalysis in Theory and in Life," *The Journal of Nervous and Mental Disease*, 1926, Vol. 64, pp. 209–224.

cance of this early preconscious sphere and its physiological substrate will be more fully attested as representing a primary integrative reaction of the total organism as a phylum.

In presenting examples from the symptomatology of the organism's basic unity and integration, I should like first to call attention to certain passages from literature which refer to those commonplace indescribable moods that characterize the subjective experiences of every-day life—the effect that is produced in us by certain passing impressions, such, for example, as come to us when looking out over a limitless stretch of sea or when listening to music; the effect produced by the soft uncertain glow of sunset, or by moonlight with its indefinite shadows, particularly moonlight on water; or perhaps when listening to music at dusk in some empty silent church; in brief, the effect that is characterized by a certain quiet restfulness and self-effacement, by the absence of harsh definition, by the cessation of pain, struggle or perplexity and all that is connoted by competitive concern. Perhaps the English historian, Green, had something of this in mind when, in a letter to a friend, he wrote: "What seems to grow fairer to me as life goes by is the love and grace and tenderness of it; not its wit and cleverness and grandeur of knowledge—grand as knowledge is—but just the laughter of little children, and the friendship of friends, and the cosy talk by the fireside, and the sight of flowers, and the sound of music." [8]

In the field of music, Thomas Whitney Surette says:

"There is in every one of us a region of sensibility in which mind and emotion are blended and from which the imagination acts, and it is to this sensibility that music appeals.

. . . . . .

"As you listen you have lived a thousand lives; dream after dream has dissolved itself in your consciousness; each moment has been a perfect and complete existence in itself. When it is finished, you awake to what you call happiness or unhappiness, peace or struggle, satisfaction or chagrin; the unreal spectacle of the world imposes itself upon you again; you are once more a human being. . . . You cannot understand music by translating it into other terms, or by preserving your associa-

[8] From Albert S. Cook's Introduction to John Richard Green's *A Short History of the English People*, New York, Colonial Press, 1899, Vol. I, p. ix.

tions with the world in which you live. Mind and feeling, sublimated by the magic of these sounds, must detach themselves and rise to a world of pure imagination where there is no locality." [Again he says:] "We make a far-away heaven to answer this universal cry, when our hand is on its very door-latch. . . . Where can heaven be if not here?" [9]

In *The Birth of Tragedy* Nietzsche speaks of the "absolute sovereignty" of music. He says, "By no means is it possible for language adequately to render the cosmic symbolism of music, for the very reason that music . . . symbolizes a sphere which is above all appearance and before all phenomena." [10]

Language attains its sublimest heights when it adds to the grace of form and rhythm the recollection of scenes in which there is this strange *"Stimmung,"* as the Germans say—this quality or influence we may recall but cannot name. Consider Gray's Elegy, for example:

> "The curfew tolls the knell of parting day,
> The lowing herd winds slowly o'er the lea,
> The plowman homeward plods his weary way,
> And leaves the world to darkness and to me."

or Browning's "Love among the Ruins":

> "Where the quiet-coloured end of evening smiles
> Miles and miles,
> On the solitary pastures where our sheep
> Half-asleep
> Tinkle homeward thro' the twilight, stray or stop
> As they crop—"

or the stanza from this same author which from a physiological, intra-organic basis is still more significant:

> "I would I could adopt your will
> See with your eyes and set my heart
> Beating by yours, and drink my fill
> At your soul's springs—your part, my part
> In life, for good and ill."

[9] Surette, Thomas Whitney, "The Symphony," *The Atlantic Monthly,* 1917, Vol. CXIX, pp. 71–80.

[10] Nietzsche, Friedrich, *The Birth of Tragedy,* Translation by William A. Haussmann, Edinburgh, T. N. Foulis, 1910, p. 55.

Then there is the oft repeated line of the Psalmist, "I will lift ıp mine eyes unto the hills, from whence cometh my help." And ıgain, "Hast thou entered into the springs of the sea? or hast thou valked in the recesses of the deep?"

In this connection a comment of Edward Carpenter's is also nteresting:

"How is it possible that the same phrase or concatenation of words hould bear within itself meaning behind meaning, horizon after horizon f significance and suggestion? Yet such undoubtedly is the case. Porions of the poetic and religious literature of most countries, and large ortions of books like *Leaves of Grass,* the *Bhagavat Gita,* Plato's *Banquet,* Dante's *Divina Commedia,* have this inexhaustible germiıative quality. One returns to them again and again, and continually ınds fresh interpretations lurking beneath the old and familiar words. . . Anyhow the matter is a most mysterious one; but as a fact it reıains, and demands explanation."

And he goes on to speak of one of his own books—*Towards Democracy*—as possessing this "central quality and kind of otherlimensional solidity" as contrasted with other writings of his in vhich there mainly occur mere " 'views' and 'aspects.' " [11]

In moonlight, says John Cowper Powys,

"Every separate object loses its garish individuality, and seems to loat free on a cool, luminous tide of self-effacement. The windless exıanses of the ocean have the same effect; and nothing is more beautiful o me than to see islands and promontories, capes and headlands, swimıing in a delicate, transfiguring mist of motionless water." [12]

Then there are the words of Christ, "The Kingdom of God is vithin you," and "Know ye not that ye are all one body?", "He hat seeketh his life shall lose it; and he that loseth his life shall ind it," "Except ye become as little children, ye shall not enter he Kingdom of Heaven," "That they all may be one; as thou, Father, art in me and I in thee"; and then the line of the Psalmist, 'Be still and know that I am God," and many sayings in similar 'ein.

[11] Carpenter, Edward, *My Days and Dreams,* New York, Charles Scribner's ons, 1916, pp. 191–192.

[12] Powys, John Cowper, *Confessions,* Rochester, N.Y., The Manas Press, 1916, . 156.

Nor may we overlook Wordsworth and his "Ode on Intimations of Immortality,"

> "Not in entire forgetfulness,
> And not in utter nakedness,
> But trailing clouds of glory do we come
> From God, who is our home:
> Heaven lies about us in our infancy!"

These and a thousand other chance expressions of prophet and poet are redolent of a symbolic attitude or outlook that is marked by indefinite sensations of an immanent harmony that contrasts sharply with the dynamic currents that run through man's history and his literature and that attest his driving self-concern, his fear and his acquisitiveness, his will to battle and to personal power.

In the main, however, the material of the preconscious life, to which I was first led through certain indications noted during the analyses of my patients, consists of those expressions of human feeling or sentiment which appear to relate to and reflect the primary physiological unity of the organism in the earliest moments of its sentient experience. From these intimations, which consisted of a markedly subjective tendency of disposition, I was led to regard the infant's primary phase of consciousness as one of complete identification with the mother.

I came to see that the mother was at first not by any means the infant's love-*object,* but rather, if I may so express it, its love-*subject.* Lacking as yet the faculty of symbolic projection that is to be acquired only with later training, the infant organism does not, at first, look out toward or feel itself in objective relation to the mother. It does not *note mentally,* that is, it does not give a name or symbol to the presence it senses physiologically as the mother's organism. Just as originally the infant is united physiologically to the mother, its body a continuous organism with her body, its self a part of her self, so in the infant's earliest stirrings of consciousness, its sensation and awareness remain still in subjective identification with the maternal organism. The child and the maternal organism are coterminous. There is no sense of separation, of distinction, of otherness. For the infant there is at first no interval, no distance, which must be bridged in order to reach

the object opposite it, outside itself. As yet there exists no object, no opposite, no other self, nor aught outside itself.[13] In the organized whole embodied in the infant's preconscious behavior-mode there is not only shown the primary physiological continuity between the organism of the newly developing infant and its biological matrix within the maternal organism, but in this early mode of the infant's dawning awareness, the basic identity or consistency that unites the organism's mental and physical spheres of behavior receives its intrinsic substantiation.[14]

In this primary subjective principle there exists an element or *prima materia* that is of vital importance in the determination of the organism's ultimate adaptation to reality. This basic principle or *prima materia* is coterminous with the organism's internal pattern or posture as an organic whole, and through it the organism determines its relation to the external object as a whole. While this principle of the organic whole with its total internal pattern must be carefully distinguished from the modal reaction involved in the symbolic or projective behavior of adult life, this subjective principle of inclusiveness and continuity that char-

[13] "For the child, the boundary between the self and the environment is less defined than for the adult. This circumstance is of critical significance to the operation of the environment upon the child. . . . The child, to a greater extent than the adult, is a *dynamic* unity. . . . The child learns only gradually to separate out voluntarily certain parts of its environment, to 'concentrate.' . . . The 'I' or self is only gradually formed, perhaps in the second or third year." Lewin, Kurt, "Environmental Forces," *A Handbook of Child Psychology,* Second Edition Revised, Edited by Carl Murchison, Worcester, Massachusetts, Clark University Press, 1933, p. 619.

Similar phenomena are equally observable among primitive people and among schizophrenic patients. With children and primitive people there is not the differentiation between oneself and other people; there is not the construction of an individualized personality, nor is there a separation between subject and object. In the schizophrenic patient there is a return, although in a distorted form, to this earlier, more confluent level of adjustment.

Storch has cited cases that abound in instances of this mood reversal. "We often found ourselves confronted by experiences in which the discrimination between the consciousness of self and the consciousness of the object was entirely suspended, the ego being no longer separated from the non-ego; the subject no longer distinct from the object; the self and the world were fused in an inseparable total complex." Storch, Alfred, *The Primitive Archaic Forms of Inner Experiences and Thought in Schizophrenia,* New York and Washington, Nervous and Mental Disease Monograph Series, No. 36, 1924, p. 31.

[14] Perhaps the *nisus formativus* of the epigeneticists parallels in the structural sphere of biology the original matrix of behavior that may be traced physiologically to the origin of the organism's total reaction-experience prenatally and in early natal life. Cf. Bertalanffy, Ludwig von, *Modern Theories of Development,* translated and adapted by J. H. Woodger, London, Oxford University Press, 1933, p. 71.

acterizes the organism of the infant in its relation to the mother does not forgo its significance in the individual's later symbolic development. On the contrary, whether in the individual's total or in his symbolic relations, this subjective principle of reaction constitutes for the organism a central balance, an integral norm, through which the organism maintains throughout life its bionomic relation to the world of outer phenomena.

This intimation of a primary phase of consciousness in which the infant mind exists as a subjective extension, so to speak, of the mother's, I called at the outset "the principle of primary identification." [15] As we consider this primary mode of subjectivity that characterizes the pre-self, we find it to be a non-libidinal, a pre-objective phase of the organism's development. Upon analysis we find also that many subjective experiences occurring in the individual's later development indicate their close relationship to this primary preconscious phase of the organism. These experiences or modes of behavior contain no element of the competitive and contentious, no driving urge to get for oneself; they are not characterized by satisfaction, either in domination and aggression or in abject subordination and sentimental dependency. In the fleeting intimations of this later behavior in which there is carried over into adult life the organism's primary mode of identification and unity, there is no opposite, no like and dislike, no "me" versus "you," no "right" and no "wrong." On the contrary, the sensations and reactions belonging to this mode give intimation of a subjectively quieter, more collected mood. They point to the presence of a more internally poised and self-possessed basis of adaptation than we ordinarily observe in the behavior-reactions of either the normal or the psychoneurotic personality.[16]

Out of the mass of material I have collected in illustration of

[15] See note 5, page 69.

[16] Reference should be made to the views of Ferenczi regarding the development of the sense of reality. According to Ferenczi in the early developmental period of the growing human organism a gradual adjustment to reality establishes itself through the resolution of the pleasure-principle. The fetal stage which is without wishes or wants is followed by various "periods of omnipotence." As may be easily appreciated, Ferenczi's concept differs markedly from the concept of "the preconscious" as here presented. Nor do his views indicate the relation of the preconscious to healthy and neurotic adaptation suggested in this chapter.

Ferenczi, S., *Contributions to Psycho-analysis,* Boston, Richard G. Badger, 1916, Chapter VIII, "Stages in the Development of the Sense of Reality," pp. 181–203.

this pre-mental, pre-objective mode, perhaps we shall find nothing more satisfactory than these lines from Romain Rolland's *Jean-Christophe* in which he attempts to reconstruct the infant's inner world of growing awareness. In this deeply intuitive, imaginative passage the novelist has described this amorphous stage of consciousness I have called the preconscious, in language which only the introverted, super-sensitive, subjective artist-mind could command:

"The day is immense, inscrutable, marking the even beat of light and darkness, and the beat of the life of the torpid creature dreaming in the depths of his cradle—his imperious needs, sorrowful or glad—so regular that the night and the day which bring them seem by them to be brought about.

"The pendulum of life moves heavily, and in its slow beat the whole creature seems to be absorbed. The rest is no more than dreams, snatches of dreams, formless and swarming, and dust of atoms dancing aimlessly, a dizzy whirl passing, and bringing laughter or horror. Outcry, moving shadows, grinning shapes, sorrows, terrors, laughter, dreams, dreams. . . . All is a dream, both day and night . . . And in such chaos the light of friendly eyes that smile upon him, the flood of joy that surges through his body from his mother's body, from her breasts filled with milk—the force that is in him, the immense, unconscious force gathering in him, the turbulent ocean roaring in the narrow prison of the child's body. For eyes that could see into it there would be revealed whole worlds half buried in the darkness, nebulae, taking shape, a universe in the making. His being is limitless. He is all that there is . . .

"Months pass . . . Islands of memory begin to rise above the river of his life. At first they are little uncharted islands, rocks just peeping above the surface of the waters. Roundabout them and behind in the twilight of the dawn stretches the great untroubled sheet of water; then new islands, touched to gold by the sun.

"So from the abyss of the soul there emerge shapes definite, and scenes of a strange clarity. In the boundless day which dawns once more, ever the same, with its great monotonous beat, there begins to show forth the round of days, hand in hand, and some of their forms are smiling, others sad. But ever the links of the chain are broken, and memories are linked together above weeks and months. . . ." [17]

Turning to the literature of science with its more objective critique toward its materials, the following excerpts from a book

[17] Rolland, Romain, *Jean-Christophe,* New York, Henry Holt & Co., 1915, Vol. 1, pp. 11–12.
This passage is not lacking in fine clues to the organic implications in paranoia.

by W. H. R. Rivers (though the interpretation of this author bears in no way upon the present study) may also be considered as an example of the type of human behavior that reflects the preconscious mode of mentation. While the observation is one regarding a "lowly people," perhaps it is their very lowliness that permits the emergence of a type of communication among them that may be described as intra-organic.

"Those who have lived among savage or barbarous peoples in several parts of the world have related how they have attended native councils where matters in which they were interested were being discussed. When after a time the English observer has found that the people were discussing some wholly different topic, and has inquired when they were going to decide the question in which he was interested, he has been told that it had already been decided apparently without word or argument and that they had passed to other business."

This passage is interesting too:

"Whenever we were going ashore five of the crew would row us in the whale-boat, four rowing and the fifth taking the steer-oar. As soon as we announced our intention to go ashore, five of the crew would at once separate from the rest and man the boat; one would go to the steer-oar and the others to the four thwarts. Never once was there any sign of disagreement or doubt which of the ship's company should man the boat, nor was there ever any hesitation who should take the steer-oar, though, at any rate according to our ideas, the coxswain had a far easier and more interesting task than the rest. It is possible that there was some understanding by which the members of the crew arranged who should undertake the different kinds of work, but we could discover no evidence whatever of any such arrangement. The harmony seems to have been due to such delicacy of social adjustment that the intention of five of the members of the crew to man the boat and of one to take the steer-oar was at once intuited by the rest." [18]

As I have said, whatever importance may attach secondarily or symptomatically to such striving, such conflict-factors as have been associated, for example, with the Oedipus complex, there is evidence also throughout the entire scope of biology of this primary constellation, this more native, more powerful instinct of the nest. In the field of zoology there is the odyssey of the eel, as of certain species of salmon, that illustrates this instinctive

[18] Rivers, W. H. R., *Instinct and the Unconscious,* Cambridge, University Press, 1920, p. 95.

trend.[19] Certainly no secondary conflict—no Oedipus complex—could account for the organic urge which drives the sockeye salmon, for example, to such epic measures as may be witnessed in their efforts to regain the native waters in which their organisms were spawned. No psychic "conflict" here—only the slow, sure rhythmic sequence of primary biological processes.

While the element of conflict and its corresponding symptomatology undoubtedly loom large throughout the social activities of man, it must not be thought that all signs and symptoms are signs and symptoms of disease. Symptoms may be indicative of health and concinnity as well as of discord and conflict. In a child the emotional symptoms with which he responds to a natural fear-producing situation, such, for example, as an angry animal, are healthy indications of the organism's behavior-reactions and possess a definite survival value; yet the same tendencies of response to an innocuous social situation in a fear-conditioned adult are symptoms of a definite behavior-maladjustment that produces only a destructive, inhibiting effect. Similarly, an outer appearance, sign or symptom may in one instance be indicative of the organism's sanity or wholeness, while in another this same manifestation may be definitely pathognomonic. Though the mimicries and dramatizations of hysteria are marks of a psychopathic trend, the tendency to masque and make-believe that characterizes primitive people and prompts the play of children is a symptom indicative of a wholesome developmental phase in the organism's ultimate adaptation to reality.

But because of man's almost total habituation to projective, symbolic data in the sphere of human behavior, the interpretation of the outer symptom and its significance is for the most part arbitrary and haphazard. In the absence of an accepted objective criterion in this field, it too frequently happens that we misjudge the symptom and thus fail to recognize when we are dealing with a quite conscious intentional metonymy applicable to man's service socially, esthetically and economically, and when we are deal-

[19] Roule, Louis, *Fishes—Their Journeys and Migrations,* translated from the French by Conrad Elphinstone, London, George Routledge & Sons, 1933, pp. 34–103, 196–242.

Norman, J. R., *A History of Fishes,* New York, Frederick A. Stokes Company, 1931, pp. 283–291.

ing with an artificial disfigurement of feeling that emanates in those distorted, grotesque manifestations with which we are familiar in psychopathology—manifestations which serve no constructive aim in the individual or in the community. Because of this confusion we have been led to adopt an interpretation in respect to the field of man's behavior-maladjustments which emphasizes exclusively the individualistic, psychopathological aspect of them and we have quite neglected those aspects of these disorders which are disclosed in a phylopathological interpretation of them. Among the numerous cases of functional neurosis reported during the World War, one of the most dramatic forms consisted of an hysterical blindness in which the victim's "sighting-eye" was the only one affected. The blindness was genuine, of course, and resulted in the individual's incapacity for military service. From a subjective psychopathological view-point such a phenomenon is interpreted as a disease-symptom indicative of a maladjustment or "split" that inculpates the individual organism, and in this restricted range of outlook this interpretation is, of course, correct. In the objective approach of phylopathology, on the other hand, this same symptom represents generically a resistance of the total organism to the socially symptomatic trauma of war. From the objective view-point of phylopathology war is seen as a symptom indicative of a definite medical problem, and in the organism's modality as a whole its protest against war embodies a plea for the organism's health and wholeness as a phylum. This symptom of protest making for the survival of the race as a whole represents as truly a constructive defense-reaction as the child's withdrawal from a ferocious animal which we saw as a symptom tending to preserve the wholeness of the single individual.

In the contrasting examples that follow, consisting of two dreams, the first, that of a precoid and the second, of a manic-depressive patient, we have a similar situation in that each of the dreams is subject to two distinct interpretations, that of psychopathology and that of phylopathology. From the view-point of phylopathology there is present not merely the element of conflict, but one finds merged in the single dream-episode both the element of conflict and the element of consonance or unity. As with the

dissociative disorders incidental to war, so there is here the opportunity to discriminate between the integrative, constructive trend of the dream or symptom and the pathological trend of the same dream or symptom. This discrimination becomes possible according as one approaches the dream from the view-point *both* of the total organic reaction and its symbolic, esoteric appearance, or merely from the view-point of the dissociative symbol or metonymy of the isolated individual. That is, as we saw in the recreant "sighting-eye," the organism's recourse to metaphor—whether the private charade, symptom or dream—is but the individualistic and restricted aspect of a symptomatology that reflects equally the far more constructive integrative trend of the organism's total reaction. So too in the following dreams the merely private, esoteric charade that is represented in the truant reaction of conflict is but the restricted and far too often misinforming aspect of the dream or symptom as a whole.

First Dream:

"I was in a cave. There was a faint light. It was very quiet and very restful. I was swimming and floating in a pool of water. The pool was very deep. It was all unusually beautiful. As I turned again to swim, my foot somehow touched bottom. It was muddy. I awoke with a start. But the quiet mood of the dream persisted."

Second Dream:

"In my dream there was a great fire which covered a large area or plot of ground. It seemed to me that the fire was so immense that it was burning everything between New York and Philadelphia. My mother was with me and I was using every effort to get away from the fire. I felt if we would get to the ocean where we could find water, we would escape. We took a train and started on our journey. The fire seemed to be increasing and we had a terrible time getting away from it. I could see everything burning, and had a narrow escape from the limb of a tree which was on fire. We finally left the train and started up an alley or narrow street. My mother was following me. At the end of the alley I found the ocean."

I am, of course, aware that in the Vulgate of psychoanalysis this latter dream is of that typical class that illustrates conspicuously the dreamer's unconscious sexual appetency in respect to the mother. So it does. But does it follow by reason of the mag-

nitude and importance of this discovery in the field of psychology or of man's outer symptomatology that the possibilities of inquiry are herewith exhausted? May we not inquire if perchance aught else remains to be discovered upon the still uncharted seas of man's intra-conscious, proprioceptive experience?

While in both these dreams there is the element of conflict as symbolized by the mud and by the fire (the element that constitutes the characteristic basis of the psychoanalytic interpretation), there is also the element of confluence and of unity as symbolized in the pool and the ocean, in the return to the medium of limitless waters, to the all-embracing sea, to mother-earth, the great comforter, the home and the nest. This unitary element would seem to reflect the organism's pre-differentiated, pre-mental or pre-conscious mode—the generic, prenatal mode of identification between the mother-organism and its offspring. And when there is considered the possibility that both the dreams just cited derive their predominant significance from this primary, generic element of the preconscious or the larval instinct of the nest, it is not difficult to recognize that the significance of conflict within these dreams is quite secondary, and to trace the relation of this conflict to those acquisitive, unconscious elements that inhere in our present social-image interchange.

There are undoubtedly many instances in which there may be seen the apposition between the symbolism expressive of the pre-sexual mode and a frankly sexual symbolism. Throughout ecclesiastical ritual and ceremonial, for example, one finds conspicuously present this notable liaison between symbols that betray their markedly sexual motivation and symbols which are motivated in the greater quiet and serenity of the preconscious mode.

Three more illustrations typical of this mode taken from the material I have gathered on the preconscious must for the moment suffice.

Tagore writes:

"Thou art the sky and thou art the nest as well.
O thou beautiful, there in the nest it is thy love
that encloses the soul with colours and sounds and odours." [20]

[20] Tagore, Rabindranath, *Gitanjali* (*Song-Offerings*), New York, The Macmillan Co., 1914, pp. 62–63.

And Kingsley:

"Oh! that we two lay sleeping
In our nest in the churchyard sod,
With our limbs at rest on the quiet earth's breast,
And our souls at home with God!" [21]

And finally Henry Vaughan in his poem "The Retreat":

"Happy those early days, when I
Shin'd in my angel-infancy!
Before I understood this place
Appointed for my second race,[22]
Or taught my soul to fancy aught
But a white, celestial thought;
When yet I had not walk'd above
A mile or two from my first love,
And looking back—at that short space—
Could see a glimpse of His bright face;
When on some gilded cloud, or flow'r,
My gazing soul would dwell an hour,
And in those weaker glories spy
Some shadows of eternity;
Before I taught my tongue to wound
My conscience with a sinful sound,
Or had the black art to dispense
A sev'ral sin to ev'ry sense,
But felt through all this fleshly dress
Bright shoots of everlastingness.
O how I long to travel back,
And tread again that ancient track!
That I might once more reach that plain,
Where first I left my glorious train;
From whence th' enlighten'd spirit sees

[21] Kingsley, Charles, "The Saint's Tragedy," *Poems*, London, Macmillan & Co., 1882, p. 78.

[22] This line with its tacit allusion to an earlier period of experience recalls a passage in Cardinal Newman's hymn "Lead Kindly Light": ". . . those angel faces smile, which I have loved long since, and lost awhile."

Stella Benson—brilliant writer and radiant personality that she was—once told me that even at a very early age, at about her fourth year, she had a distinct sense or "recollection" of having lived previously the experience she was passing through at the moment. Such apparent memories are doubtless to be explained as instances of the organism's momentary reversion to the pre-symbolic or preconscious mode in which the prevailing conscious mode is retrojected, so to speak, into this phase of the organism's primary identification. That is, where the organism's feeling-experience regresses, the momentary content of the individual's mental experience regresses along with it. So that one seems in the moment to relive again a similar or identical experience "remembered" from long ago.

That shady City of palm-trees.
But ah! my soul with too much stay
Is drunk, and staggers in the way!
Some men a forward motion love,
But I by backward steps would move;
And when this dust falls to the urn,
In that state I came, return." [28]

It would take us too far afield to enter into a discussion of the many instances in the domain of physiology that are redolent of the organism's preconscious mode. There comes to my mind in the moment the reaction we see in the mother's instinctive recourse to rocking her infant to sleep or into a state of repose, with the undoubted physiological intention of simulating the condition of prenatal quiescence in which the infant had been automatically rocked from side to side through the motion of the mother in walking. That is, in regulating the infant's response postnatally, the mother instinctively seizes upon an organic association which has already conditioned the infant throughout the nine months of its prenatal life. In this same connection I think also of the undoubted physiological implication in the well known therapeutic measure for quieting the excitement of mental patients through subjecting them, often for days at a time, to a continuous immersion in warm water. These and similar phenomena are too numerous to discuss in the limits of the present study.

In our wish to outline at the moment merely the symptomatological aspect of the organism's physiological unity, it would likewise be beside our purpose to enter at all fully into a consideration of the significance of music or of poetry in their relation to the infant's mode of primary subjectivity—the early phase of its preconscious life. Let it suffice to recall how music with its subtly indefinite, restful quality is capable of invoking a certain harmony and integrity of feeling. I have spoken of the ineffable influence of moonlight, and I recall that a certain musician of renown, while looking at the moon during an ocean-crossing, remarked to a patient of mine that always when looking at the moon he could distinctly hear musical notes, the sounds of which were somehow

[28] *The Poems of Henry Vaughan, Silurist*, London, Lawrence & Bullen, 1896, Vol. I, p. 59.

interwoven with the moonlight. That music induces an attitude of gentler quiescence, that it is thought to "soften the hearts" of the wayward and rebellious we know from its practical application among prisoners and even among the mentally deranged.[24] But, had we space to devote to the psychological effects induced through music, it is in the primarily organic qualities of rhythm and in the concomitant unity of tone or phrase that we might most helpfully study its physiological implications within the organism. For from evidences I have gathered, the appeal of music resides largely in the early associations through which this esthetic reaction is linked with certain organic rhythms coincident with the preconscious period and with the genetic principle of the nest.

That the significance of water symptomatically or psychologically is connected with the early physiological phase of the infant's preconscious experience as it rested in its amniotic medium within the uterine capsule, material gathered from dreams, delusions, myths and folk custom affords overwhelming evidence. The recurrence of water in the dreams of markedly regressive patients, and its assumed beneficence as employed in religious usage and in community mores are too well known to require detailed comment. Consider the lines from The New Testament, "Except a man be born of water and of the spirit, he cannot enter into the kingdom of God." In the Bible the Lord, the genetic source and spiritual sponsor of man, is referred to as "the fountain of living waters." And then among the many ancient rituals associated with water may be mentioned the ceremonial of baptism in religious use and the folk custom of well-dressing characteristic of English countrysides.

The implications of the preconscious are really limitless, and no single chapter could half do justice to them. It may be well to mention, however, that the study of this phase of consciousness bears very significantly upon the field of hypnosis, upon the pseudo-alleviations of habitual alcoholism, upon claims to telepathic prowess and spirit communication, upon states of somnolence, trance and catalepsy, and upon the euphoria of the drug

[24] Cf. Tennyson's lines:

"Music that gentlier on the spirit lies,
Than tir'd eyelids upon tir'd eyes."

addict, upon the incidence of religious conversion and in a very special way upon those psychopathic reactions that mark certain regressive, schizoid types of dissociative behavior. But perhaps no outer reflection or social transmutation of this primal mode is more marked than the tendency toward mysticism and the occult conspicuously observable in oriental peoples. The extent to which mysticism and the call of mystery influence likewise the processes of our presumably normal Western mentation is undoubtedly traceable also to this bio-physical plane of sensation and motivation embodied in the preconscious. Indeed this element of mysticism underlies and animates many phases of thought and activity commonly regarded as normal. It accounts among other things for the many self-comforting extravagances we find in the sentiments of the philosopher and the religious teacher.[25]

The term preconscious, then, refers to a precognitive, prejudicial phase of the mental life that is concomitant with the late prenatal and early natal development of the physiological organism—the quiescent, unified period that represents a mode of completion and fulfillment, of uninterrupted confluence and totality. Within this primary, total, physiological process there arises an unrestricted sensory field that makes of the organism a vast, undifferentiated, bio-physical *receptor* as in the early natal months of its integration life begins to take on form and definition. This sensory domain finds its concomitant expression in an equally unrestricted, undifferentiated *effector* or motor field, of still earlier integration, as more and more the organism as a whole fashions its bionomic rapport with the environmental world of outer stimuli.

Needless to say, in the organism's progression from its original unitary, confluent mode to its present adult, "normal" status in a

[25] The gratuitous claims to special distinction people make on the ground of their "mystical experience" are as commonplace as they are numerous. I recall a book by Margaret Prescott Montague, *Twenty Minutes of Reality,* that is replete with passages affording pious support of these characteristic pretensions. Here, as in similar human documents, one finds really serious endorsement of the many sentimental distortions which this early unitary mode of the preconscious undergoes in the self-consoling aspirations of later adult life. Records of this type, in which unfortunately literature abounds, cannot but render one sympathetic to the man who, obviously possessing more acuity than reverence, was led to remark that "because Heaven lies about us in our infancy, it is no reason why we should lie about Heaven when we have grown up!"

complex society of organisms, much has happened to deflect the bio-physical course of the individual's primal, integrative processes. If we may judge from our present wide-spread engrossment in symbolic standards of adaptation and their arbitrary emphasis on conflict as a primary motivation, it would seem impossible to recognize, much less regain, man's original bio-physical prerogative—his total mode of bionomic adaptation as a phylum. But from the few scattered examples presented here the student may sense, at least in part, how this primary total organization of living processes, with their basis in an early confluent, larval mode, is reflected socially in a preconscious state of organic sensitization or "awareness." While it is obvious that in its original physiological state this preconscious mode quite excludes all symbolic or ideational content—all social or inter-individual exchange as we now know and utilize it in adult years—this pre-mental sphere or preconscious mode of expression or of feeling is not without its avenues of intercommunication socially. If it has inadvertently happened that only what is ideational is now preponderantly operative inter-individually in the species man, this does not necessarily mean that the pre-ideational life of man, with its primary needs and feelings, has not also its intercommunicable forms of expression among the elements that comprise human society. It does mean, however, that man's sensitivity to his own original preconscious mode of mentation can be recognized now only through the smoke and the clouds of his present symbolic form of exchange—and then only as a symptom.

For instance, one of the most common of man's social expressions and one that indicates, symptomatically, the primary, physiological principle of the preconscious is his religious feeling or emotion. In this behavior-constellation that we know as religion, with its phenomenon of prayer, its recourse to rhythmic measures of expression, to music and poetry, to song and dance and the arts, may be found the symptoms of an elemental mood that again reflect man's early preconscious mode or the genetic principle of the nest. True, all the religions of the world embody the element of distortion in that they are in actuality mere symbolic substitutions for the preconscious mode and not a direct emergence of total physiological processes from the confluent mode of the organism's

intra-uterine stage to a completely integrated society. But, as I hope to make clear, man in his ordinary normal outlook, as human society is now constituted, is also lacking in complete physiological integration.

Still another behavioral expression as it occurs in our accustomed social setting is not without its preconscious significance. I am thinking of the phenomenon we call "genius." A distinguishing feature in the expressions of genius is its power of concentration as a unified totality. While an eminently individualistic, often erratic, and even at times a deviate, anti-social expression, there are evidences that this power arises out of the vast, highly charged reservoir of the organism's primitive life-forces as they emerge from the early preconscious identification between the maternal and infant organisms. But it would seem that the race of man, incapable as yet of maintaining the organic integration that is his own natural heritage, must remain content merely to serve —and only vicariously—these sporadic moments of genius.

The reader will have gathered that the tendency of the preconscious mode is not what one would ordinarily call "up and doing." Nevertheless he will doubtless also observe that this primal mode or phase is historically by no means negligible when we come to reckon biologically with the genetic data of human consciousness. The organic confluence traceable between the impressions of later adult life and this primordial principle of growth is a factor which from the standpoint of evolution constitutes a most important determinant in the subsequent mental life of the individual and of the phylum. For the recognition of this proprioceptive mode of consciousness opens an indispensable avenue of correlation not only between the processes of the individual's conscious development and the incidental disharmonies occurring in his mental life, but also between the primary life of the organism as a phylum and man's present social images and world-wide disaffections.

During the early undifferentiated, preconscious phase of its growth, the organism's experience is total, stereognostic, muscular. The "consciousness" of the infant is as yet only vegetative, physiological, proprioceptive. As yet there is no "thinking" as a selective, cortical part-function that is mediated symbolically through the projective senses. It is only very gradually that the

selective, restricted, specialized activities arising with the growth of the organism's projective mentation begin to take form. Correspondingly, the mother's organism and the organisms of others begin gradually to recede from the subject and to take on the outline of objective definition. With the infant's continued development it comes to see, to look at the mother's organism. But it also happens that along with this slow, almost imperceptible development, the organism of the mother comes to take on the semblance of something aloof, something foreign and apart from the infant's own totally organized structure rather than constituting a physiological continuum with it.

We have under consideration, therefore, a mechanism whereby the organism of man, unlike that of other animals, passes from a primary phase of total physiological subjectivity and continuity to a phase of mentally objective or symbolic "awareness," first in respect to others and then to itself. In this mechanism there occur the first stages of a process of adjustment, of an organic emergence, that is primarily integrative and physiological. But, as I have just indicated, something happens that is biologically untoward. Unlike the adaptive progress of other animals, the organism of man is thrust forward into a new and relatively untried field of adaptation. Total, integrative processes are newly summoned to a venture that will put to a test the primary authority of the organism's basic totality. For in the process of coming to "see" with greater *objective* definition, the infant organism also comes, through almost imperceptible changes, to see its outer world as though in its "seeing" it were necessarily looking across a barrier. The mother organism takes on the semblance of something foreign, even alien. The element of otherness is introduced. Within an originally subjective, unified premise of action an organic cleavage takes place. That is, a secondary, symbolic function is developed within the infant's totally organized structure and there is launched a biological trend consisting of total process plus secondary process, which, according as integration prevails or is retarded, determines the organism's later health or disfunction.

This early stage of organic emergence is of the utmost importance. For it is this stage that embodies the very *prima materia*

of healthy adult consciousness—the organism's ultimate behavioral integration. It is, however, a *prima materia* to which students of objective science have not as yet given serious attention, and, in slighting this phase of human biology that represents the origin of the organism's behavior as an individual and as a phylum, we have overlooked the physiological matrix of man's mental and social development.

Many writers have pointed to the common tendency among primitive people, schizophrenics and children, as also among mystics, to perceive in wholes and to feel themselves identified with objects or other persons in a way that is sharply differentiated from the mental attitude that customarily characterizes the use of verbal images or words.[26] This trend observable in schizophrenics has been invariably referred to as a flight from or an aversion to reality, as though the sole significance of reality lay in the personality's acceptance of it upon a symbolic plane of adaptation. But there are undoubtedly elements belonging to the organism's preconscious mode that enter into the organism's adaptation to the objective environment or to reality. While in

[26] "To understand a thing or to communicate his understanding of it the primitive 'lives himself into the thing' in a motor sense. It has been rightly said that originally religions were neither understood nor felt, but were danced." Storch, Alfred, *The Primitive Archaic Forms of Inner Experiences and Thought in Schizophrenia,* New York and Washington, Nervous and Mental Disease Monograph Series No. 36, 1924, p. 32.

"Lévy-Bruhl endeavored to explain this sort of immediate psychic and bodily entering of the self in the perception of things as a 'participation' of the ego in the objects. He calls attention to the fact that, in primitives, comprehending and recognizing have characters entirely different from these processes in ourselves. The primitive, he says, does not really have an idea in our sense of the word; he not only calls the object up before his mind, but he . . . 'participates' in it." *Ibid.,* p. 33.

In referring to one of his cases Storch says, "This case is first of all remarkable for the example it furnishes of participation. The participation here rises to the point of a feeling of union with the highest. For this patient, in a more definite way than in the examples previously given, the difference between the I and the thou is extinguished. Lévy-Bruhl is right in calling a union of this sort in primitives a 'mystic participation'; for without doubt this feeling of becoming one with deity is the central experience of all specifically religious mysticism." In speaking of this tendency he also says that "It comes to expression in the 'tat tvam asi' (that art thou) of the Indians as well as in Mechthild's verses: 'I am in thee and thou art in me.'" *Ibid.,* p. 74.

Here again we may call attention to the preconscious mode in Christ. His words are replete with intimations of this mode of primary identification. For example, "The word which ye hear is not mine, but the Father's which is in me." See also page 73. (Cf. Burrow, Trigant, "The Heroic Rôle—An Historical Retrospect," *Psyche* (London), 1926, Vol. VI, pp. 42–54.)

children, in primitive people and in schizophrenics we undoubtedly discover a tendency toward regression in their manner of holding to this mode in opposition to a symbolic form of adaptation, this preconscious mode is not to be disregarded as a contributing factor in the organism's adaptation to the *real* world about it.

Apparently in the development and specialization within the organism of the external senses through the process of symbolic mentation, and in the concomitant projection of the organisms of others outside of the subject as though these organisms were organically alien to and discontinuous with oneself, there occurs a complex of organically divisive phenomena whose external counterpart is reflected symptomatically in conflicting social images and relationships. This divisive trend affects man's own internal processes and, existing as it does within his organism as a phyletic whole, it entails a breach which he now only *senses*—and as yet but vaguely—as an ineptness of function internal to himself. It is innately characteristic of man throughout the species that he struggles constantly to overcome this organic breach. He struggles constantly to recover his primary organic basis and restore his physiological integrity of function as a phylum by reuniting the individuals or elements that constitute its integral structure. But the now separate, individuated element, having already grown unconsciously habituated to its newly acquired mental or projective system of images and interrelationships, obstinately persists in adhering to its merely symbolic, projective paths of interindividual contact and affinity.[27] Thus through its own individ-

[27] In his discussion of "General Semantics" Korzybski has pointed out the confusion arising from the use of false identities in language and logic and the relation this may have to individual and social disorders. His effort is to remedy this disturbance of communication by the application of non-Aristotelian, non-elementalistic concepts. But is this approach sufficiently integrated with basic biological factors? Isn't this, after all, Aristotle *versus* Aristotle? For I cannot but wonder whether with Korzybski there is not too much the tendency to meet concepts with concepts, to deal mentally (symbolically) with an inadvertence in development whose basic motivation lies wholly outside the mental or symbolic field. Certainly this insidious inadvertence was precisely the error that for a very long time obstructed the work of my associates and myself.

Korzybski, Alfred, *Science and Sanity, An Introduction to Non-Aristotelian Systems and General Semantics,* Lancaster, Pa., The International Non-Aristotelian Library Publishing Company, 1933.

"Neuro-semantic and Neuro-linguistic Mechanisms of Extensionalization," *The American Journal of Psychiatry,* 1936, Vol. 93, pp. 29–38.

uated autogeny of function man's organism becomes isolated and confined within the limitations of its mere secondary, symbolic, projective processes. He now, therefore, inevitably employs the projective senses or the image only to defeat the efforts of the organism as a whole to re-centre and reintegrate its total basis of reaction as a phylum.

As a result of this symbolic displacement and of the misguided efforts of the organism to recapture its original organic unity and integrity, the separate individual fashions a mere mental image of harmony and unity—an image which the organism automatically projects outside of itself toward the person or organism presumably existing apart from and opposite itself. This process results in a mere mental phantasy, in a merely wishful harmony or unity that vainly attempts to render the organism substitute service for the basic, intrinsic harmony of function of which it has been deprived as a phyletically total organism. As I sense this intrinsic condition—a condition to which my attention has been led not only through the analysis of individuals but also of groups —there has occurred a physiological breach in the natural continuity existing throughout the species that is analogous to the breach we have traced in the individual. This breach is organically intolerable to the organism, whether phylum or individual, and the resultant separated element, in trying desperately to reunite itself to itself, reaches out inter-individually in order to bridge this unwelcome gap. But because the nature of this breach has to do with the interposition of a symbolic behavior-motivation, the individual unconsciously reaches out only symbolically. He can, therefore, only call or give the name of "right" to this purely symbolic effort of the organism to reëstablish its harmonious intercommunication and contact. Through this socio-symbolic mechanism each individual arbitrarily requires that the presumably alien organism, or the person opposite him, shall conform to this symbolized surrogate for the organism's total harmony as a phylum. The symbolically separate individual requires that the organisms of others, as well as of himself, shall act or "behave" [28] in a manner that represents the surrogate of harmony as expressed socially under the symbol "right" or "good." This

[28] Anglo-Saxon, *behabban,* to restrain.

means that the individual as object must behave as the subject elects. At the same time it is quite overlooked that each such individual "object," when in turn acting in his prerogative as "subject," reserves no less arbitrarily to *himself* the privilege of determining, both for himself and for others, what is symbolically (wishfully) harmonious or "right" and what is not "right." Thus we arrive at the same conclusion as in the previous chapter where we started with the more obvious conflict characteristic of social behavior. In our present social interchange "right" with us is not the biological prerogative we customarily think it is. It is a symbol that has lost contact with the physiological function symbolized. It is a mere detached social image that has come by accident to supplant the original authority or rightness constitutive of physiological wholeness—a wholeness which, to speak in terms of the phylum, is demonstrated "embryologically" in the total organic relation between the infant and the mother organism.

To repeat, the originally total, organic sense of wholeness, coordination and fitness, or the basic rightness that is common and consistent throughout all organisms of the species, has been shifted to a mere social image of wholeness or rightness. This shift has been accompanied by a phenomenon of behavior whereby the isolated, separated individual has been vested with a pseudo-authoritative or proprietary "right." Right is *his* right. It is his private possession. Inevitably this over-accentuation of the symbol or the outer appearance of right has ultimated in conflicts and disorder within the individual that have their reaction-counterpart in mere peripheral, symbolic representations of unity, harmony or wholeness in the social community.

Under these conditions it is not surprising that there exists socially the hodgepodge of inter-individual relationships, of misunderstandings, of contradictory feelings and impressions, of love in the form of mere ownership, of jealousies, petty competitions, proprietary affections and equally proprietary aversions. It is not surprising that there are the constant incentives at one time to dictatorship, at another to servility, with all the irritation and disaffection which we not only see but which we ourselves feel subjectively both as individuals and as nations. With this basic miscarriage of function within the primary organism it becomes

clear why we have such monstrous disfigurements of feeling and thinking as exist in our various social and political dogmas and creeds. It becomes clear why there lurks beneath our programmes of socialism and a wider brotherhood a secret assertion of the self that is in no sense different from the self-assertion that characterizes the most blatant of our monarchical or oligarchical régimes. Nor is it surprising that, as a result of this primary dissociation, we have in the community widely disseminated and rapidly growing principles of communism which, though dynamically active, belong to a purely verbal, symbolic system of behavior, and that upon analysis these principles indicate as violent an intolerance toward a physiological basis of community feeling and accord as may be found in the most enthusiastic advocates of our prevailing capitalistic systems. Furthermore, as these principles affect the organism at the very source of life, their influence upon the primary functions of mating and of parenthood represents a factor so subversive within the phylogenesis of man that it cannot be adequately estimated. Nor can we adequately estimate their effect upon man's family life and upon his social and economic organization generally.

Prior to the organism's acquirement of the specialized relationships established through the projective senses and the use of language, or prior to the differentiation between the infant and the maternal organisms induced through the incidence of the image or symbol, there existed, as has been said, the total subjective identity of the infant and the maternal structures. But this condition of subjective, physiological identity that represents the larval state of individual consciousness is a state of subjective, physiological identity that represents also the primary basis of consciousness within man as a phylum. Just as this distinction between the organism's total subjective identity and its external adaptation by means of the verbal image or symbol has its place in the bionomic function and development of the individual, it has its place also in the bionomic function and development of the race. It is very important that this total sphere of adaptation on the basis of the organism's primary biological identity be kept distinct from the individual's subsequent projective, symbolic adaptation. It should be kept distinct both in respect to the individual as the subject

"I" and also in his relation to his social confrères as they are represented in the projectively perceived phenomenon of "others." It is equally important that this distinction be kept in the foreground with respect to the function and development of society.

For organization within social units has its homologue in the organization of the individual. The biological principle of recapitulation which in a general way holds in the sphere of the organism's anatomical structures holds no less in the sphere of man's physiological sensations and feelings. The reactions of conflict and discord existing in society have their biological equivalents in the conflicts of feeling and sensation existing in the single individual.[29] Similarly, qualities of sensation or feeling which tend to harmonize the elements of the species into a continuous unitary organism have their homologue in feelings or sensations which tend also to render unitary and harmonious the processes of the single individual.

In connection with this emphasis upon the racial or generic significance of a primary, physiological basis of consciousness, I shall present two more dreams which indicate how the state of "awareness" that is preconscious or pre-mental may be carried over into adult life. Within the scope of symptomatology the investigator is limited, of course, to the mere subjective intimations of a mode of consciousness that is genetically unified, total, physiological and phyletic. These two dreams, however, the one derived from a literary, the other from a clinical source, may serve as a fitting conclusion to a discussion which unfortunately is of necessity all too abridged.

Those who have read the poetic and highly intuitive descriptions of the inhabitants of the Aran Islands by J. M. Synge will recall the following dream which the author had while he was living with this rugged people of "divine simplicity":

"Last night, after walking in a dream among buildings with strangely intense light on them, I heard a faint rhythm of music beginning far away on some stringed instrument.

[29] Burrow, Trigant, *The Social Basis of Consciousness—A Study in Organic Psychology*, International Library of Psychology, Philosophy and Scientific Method, New York, Harcourt, Brace & Co.; London, Kegan Paul, Trench, Trubner & Co., 1927, pp. 76, 132, 148.

"It came closer to me, gradually increasing in quickness and volume with an irresistibly definite progression. When it was quite near the sound began to move in my nerves and blood, and to urge me to dance with them.

"I knew that if I yielded I would be carried away to some moment of terrible agony, so I struggled to remain quiet, holding my knees together with my hands.

"The music increased continually, sounding like the strings of harps, tuned to a forgotten scale, and having a resonance as searching as the strings of the 'cello.

"Then the luring excitement became more powerful than my will, and my limbs moved in spite of me.

"In a moment I was swept away in a whirlwind of notes. My breath and my thoughts and every impulse of my body, became a form of the dance, till I could not distinguish between the instruments and the rhythm and my own person or consciousness.

"For a while it seemed an excitement that was filled with joy, then it grew into an ecstasy where all existence was lost in a vortex of movement. I could not think there had ever been a life beyond the whirling of the dance.

"Then with a shock the ecstasy turned to an agony and rage. I struggled to free myself, but seemed only to increase the passion of the steps I moved to. When I shrieked I could only echo the notes of the rhythm.

"At last with a moment of uncontrollable frenzy I broke back to consciousness and awoke.

"I dragged myself trembling to the window of the cottage and looked out. The moon was glittering across the bay, and there was no sound anywhere on the island." [30]

I am intentionally presenting this dream not only because it implies the unitary element of the preconscious, but because of the element of struggle it also embodies. There is the "strange intense light" which I have frequently found recorded in dreams in which there occur the symbolic intimations of the organism's more primordial behavior-quality, whether of poet or peasant; there is the rhythm of music, beginning far away, coming closer, "more powerful than my will," "till I could not distinguish between the instruments and the rhythm and my own person or consciousness." But obviously there is also conflict; there is the necessity to break "back to consciousness," to his "will." While on awaking

[30] Synge, J. M., *The Aran Islands,* Boston, John W. Luce & Co., 1911, pp. 103–104.

there was only the moon over the bay and "no sound anywhere," yet there remained a conflict deep within the dreamer's "trembling" organism.

Dealing as we are with the symptomatology of unity in its relation to conflict, perhaps we may take our cue as to the meaning of Synge's dream from a passage in Edward J. O'Brien's Introduction to Synge's book:

"Picture this later Heine settling down in these wild and desolate islands, adapting himself to simpler and ruder conditions of life, taking the people as he found them, and yet somehow, despite the wandering spirit that possessed him, succeeding tolerably well in domesticating himself, so that we find him rocking the baby's cradle or joining eagerly and naturally in the story-telling circles of an evening by the flickering firelight." [31]

With this suggestion of Synge's capacity for deep sympathy with the native consonance of this water-people, we may turn to the poet's own words:

"It seemed like a dream that I should be sitting here among these men and women listening to this rude and beautiful poetry that is filled with the oldest passions of the world."

But "in some ways these men and women seem strangely far away from me. They have the same emotions that I have, . . . yet I cannot talk to them where there is much to say. . . .

"On some days I feel this island as a perfect home and resting place; on other days I feel that I am a waif among the people. I can feel more with them than they can feel with me, and while I wander among them, they like me sometimes, and laugh at me sometimes, yet never know what I am doing." [32]

And he might well have added that they never will know; for Synge, poet though he was, naively assumed, like the rest of us, that his mere symbolic knowing could somehow be reconciled, also symbolically, with the rhythm and the music that indicate the primary integrative function of all living processes. No, they could not "know" for, after all, the poet *was* a waif, a wanderer in a "normal" world of images and symbols that had lost their savor. Like the rest of mankind, who have become civilized and ac-

[31] *Ibid.*, p. x.
[32] *Ibid.*, pp. 120–121.

customed to symbolic or image-knowing, Synge searches everywhere for a mood that is consonant, found it momentarily in this sea-girt people "in the intonation of a few sentences or some old fragment of melody," only to reject it in favor of his accustomed symbolic knowing, his will. It is no wonder, then, that he should say: "There is hardly an hour I am with them that I do not feel the shock of some inconceivable idea . . ." Not only a shock but, as in his dream, an "uncontrollable frenzy" that leaves his dragged-out organism trembling in the midst of this "perfect home" and the moonlight on the sea. For the preconscious, the pre-acquisitive, larval mode of living organisms is of its nature exclusive of the projective idea, the "you" and "me," the "right" and "wrong" or the otherness implied in *looking at* on the basis of man's image-intercourse. But Synge, like the rest of human beings, goes on searching, searching for a symbol, an *idea* of unity, searching everywhere with never ceasing clash and shock—everywhere except within the primary integrative processes of his own physiological organism, the primary physiological organism of man as a race.

Among the evidences of the effect of early bio-physical impressions induced within the organism before its adaptation to external influences, the following dream offers material that would seem to bear further witness to the existence of this direct continuity between the organism's early physiological experience and its subsequent emotional expressions:

"This was an horrible and degrading impression. I seemed to be wrapped from head to foot in a powerful bloody muscle. The thing was alive and covered with blood. I distinctly felt its animal heat, and the slippery thing evaded my grasp. Its touch seemed to pollute my whole body and to fill me with loathing, but every effort to dislodge it only increased its tension. Slowly but surely the thing seemed to be crushing the life out of me—but my chief impression was not of dying but of dying in this fashion. It seemed to me that such a death would be disgraceful; and as I struggled to get rid of the hot, polluting thing, I woke up. . . . I was terribly afraid, every nerve in my body was quivering with excitement, and the whole room seemed filled with a nameless horror. I do not think I slept for hours after, so terrible was the impression. I have never been able to trace it to any past impression nor can I account for it. It was distinctly the most horrible dream I ever experienced."

A clearer instance of a dream of the *Mutterleibsphantasie* could hardly be imagined. But, as obvious as it is that from the viewpoint of the psychopathologist the trend of this dream is one of regression and that it involves conflict within the emotional field, it is equally obvious that this same dream, when viewed from the position of phylobiology, reflects a disturbance within the organism's physiological processes that are primarily unified. As a symbolic, mental symptom of an inner physiological disturbance, this type of phantasy is not at all uncommon in the unrecorded annals of man's symbolic efforts to achieve a "home," a "resting place," a mere symbolic unity in substitution for those physiologically integrative processes that are basic to his organism.

Observations covering many years warrant the view that throughout the species there is nothing more common in man's present behavior than his propensity to replace with mere outer, detached, rationalized images of unity those integrated physiological reactions that represent the adult emergence of his early larval identification with the maternal organism. Throughout society there is a marked absence of a generically organized basis of thinking and feeling that is physiologically integrative. Accordingly, the single individual has recourse only to a secondary, symbolic mechanism—a mechanism that characterizes the adaptive behavior of society generally—and thus he *projects* the image of a personal "home" or "nest." In other words, in seeking this purely esoteric escape, he automatically regresses, or falsely integrates, toward a mere symbolic representation of his original prenatal basis of unity.

Maintaining this broader perspective upon man's conflict, individual and social, we find that in his present wide-spread social substitution of an image of unity for the physiological basis of adult, integrated feeling and thinking, man as a race has recourse to the same projective mechanism of substitution that characterizes the apparently bizarre dream of the enveloping muscle. The difference lies in the circumstance that our patient's dream is a night-dream, while society's universal thraldom to the image represents a socially systematized day-dream. Though the individual dreamer reverts with shame and loathing to his symbolic representation of the organism's physiological basis of prenatal

identification, society reverts with an equal sense of shame and repugnance to its symbolic surrogates for the organism's physiological integration as a phylum. In both situations there is a displacement of primary feeling-processes through the substitution of irrelevant images possessing a purely moral or divisive (right and wrong) connotation. In consequence, with the effort of the organism as a phylum to regain its basic physiological unity through the medium of the symbol, there takes place an automatic image-reversion or regression toward latent, primary, total processes, with a resulting phantasy-system that is proportionately distorted and bizarre.

For instance, consider man's effort to achieve "peace." Peace with man, whether familial or international—despite an underlying physiological urge toward unification—represents an adjustment that is limited to those symbolic reactions that constitute his external behavior. There is an effort at the "settlement of differences," as we say, wherein the very words imply a "bargain" in social images and an exaltation of the very "difference" that takes place in the infant organism when for the first time it begins to "look at" the mother organism as if across a barrier. In other words, there is an effort to achieve peace or unity through those projective measures that can only produce external symbolic differences. A divisive, "good-bad" or moralistic basis of behavior is established as criterion, and there results the universal phantasy that depicts certain types of behavior as good, worthy or peaceful, and certain other types as bad, shameful or antagonistic. From this point it is an easy step to the social projection of the phantasy that unconsciously pictures war, conflict or any kind of behavioral disharmony as morally (mentally) horrible, loathsome, revolting, shameful or bad—a social reaction that is identical in behavioral structure with the reaction of the individual in the dream of the enveloping muscle we have just considered. Incidentally, with the arrival of so-called "peace" or a mere adjustment of external, self-imaged behavior (for the individual it is the day after the horrible dream of the night) there remains for a while the remembered pain and inexplicableness or the residuum of experience that is called "horrible." But eventually explaining this unpleasant experience through recourse to the same superficial, external,

mental measures that brought about his conflict, man goes elatedly on with his image-patchwork until at some later time the spectre of conflict suddenly looms again on the horizon of this presumably peaceful scene in larger proportions than ever. Our naive surprise being in proportion to the tenacity with which we cling to the image, to the detached and divisive symbol, there is approximated ever more closely not merely a sporadic social conflict, but a consistent world-wide and generic, behavioral disorder that is identical with the disordered reaction of the individual as represented in the dream. Briefly, man's social substitution of an image of unity for his physiological basis of integrated feeling and thinking results in a socially systematized phantasy that is no less grotesque than the dream I have cited. There is the equal implication of a reverse, disintegrative trend with its corresponding reaction of horror or shame.

While it is true, then, that the psychopathologist's point of view is quite accurate, it must be kept in mind that it is accurate only within the limits of psychopathology or of symptomatology. Undoubtedly from the view-point of psychopathology or the restricted domain of outer symptomatology this dream is sexual and indicates a regressive, disintegrative or pathological effort on the part of the individual to regain the organism's uterine "peace," with corresponding reactions in the form of repugnance and shame. But in the interpretation of phylopathology this same dream reflects symptomatically the socially quite common disintegrative or regressive effort of man to regain merely symbolically the organism's primary physiological unity, and there result unconsciously within the phylum, as I have said, corresponding reactions in the form of shame and revulsion.

So that however revolting to us, as to the priest whose dream I have cited, there is here but the symbolic expression of an experience that represents symptomatically man's social denial of his originally unified, physiological behavior-basis—a denial that is common to the race and would undoubtedly be so recognized were man to awaken to the significance physiologically of his primordial totality as a phyletic organism. If in Synge's dream there is denial of unified life in favor of our accustomed outer image-criterion of unity, here in this dream of a "polluting," en-

veloping muscle there is but an extension of this denial to its logical outcome in violent loathing. For when the symbol, the element of division or separateness, threatens to invade those total physiological processes that represent the tranquility of the larval organism, when the symbolic or outer, divisive, self-reflective behavior of man tends to assume an authority that is to be found alone within the primary physiological processes of the total organism, there arises a conflict that knows no bounds—a conflict which rends and tears asunder and would even seem to aim at inevitable total annihilation, individual and social. But in this dream there is developed at least symptomatically a heightened emphasis upon sheer physiology that is inescapable.

An end, though, to symptomatology. An end to citations respecting those secondary reflections of the organism's behavior we see in the course of man's individual and social reactions. This field of man's symptomatology belongs properly only to the versatile mentist, to the semantic logician with his meticulous splitting of inconsequential hairs. Whether this field pertains to education with its effort to lead the mind, or to the law with its effort to coerce it, the field is essentially that of the symptomatologist. Similarly, whether it pertains to economics or to sociology, whether to psychology or to psychiatry, it is essentially the field of the symptomatologist. For the domain of symptomatology or of the expert mentist concerns itself with those peripheral impressions of behavior which the organism receives from without and interprets only after it has secondarily projected them in the form of images. In the structures participating in this peripheral adaptation of the organism of man bionomically, the lamina which the anatomists call the ectoderm—the layer which throughout the species composes embryologically the organism's external organs or tissues and mediates its contact with the environment—is of vast importance phyletically. For in the process of man's evolution it has become a specialized function of this racial lamina not only to project the organism's specific impressions outward or in front of itself in the form of ideas or images, but also to mediate between the organism's external and its internal environment as a whole. It is the outwardly projected reflections of the function of this racial lamina which constitute man's elective, symptomatic

reactions in contrast to the reactions of his internal organism as a whole.

But let us turn now to the immediate concern of the present thesis and to the consideration of man's internal bionomic life. Let us consider those reactions which are primarily physiological and essential, and in relation to which the images and ideas expressed in man's outer symptomatology stand as but secondary reflections.

PART II

ORGANISMIC MORPHOLOGY

"Language never represents objects themselves but the concepts which the mind has formed of them in that autonomous activity by which it creates language."

WILHELM VON HUMBOLDT

CHAPTER V

THE NEUROSIS AS A RACIAL PROCESS AND ITS INTRINSIC MORPHOLOGY[1]

FOLLOWING normal and traditional interpretations, it has ever been the position of psychiatry that mental disorders consist in a disagreement or disparity between a patient's ideas or mental content and the ideas or mental content of the so-called normal persons about him. In all systems of psychotherapy the treatment, actual or implicit, rests upon this mental definition of the disease. Experimentation, however, with the interreactions of individuals under conditions of laboratory control, indicates that the real disparity in these disorders is not located in this inter-ideational sphere of the individual's reaction but that it represents a behavior-distortion in the biology of man as a race. By laboratory control I mean the application to the field of inquiry of a condition of observation in which the student's subjective opinion in respect to the observable material is suspended in favor of the objective features of the material observed. In accord with the application of this method to the behavior-disparities occurring within social groups, I shall briefly describe a trend of investigation which attempts to trace to its demonstrable source the essential nature of this biological conflict or disparity as indicated on the basis of these experiments.

Popular opinion to the contrary notwithstanding, insanity, as viewed from the basis of these inquiries, is not a disease of the

[1] The present chapter was originally published under the title, "The Morphology of Insanity as a Racial Process—A Study of Attention in Relation to Adaptive Disorders," in *The British Journal of Medical Psychology,* 1933, Vol. XIII. An outline in the same trend was published under the title, "A Phylogenetic Study of Insanity in its Underlying Morphology," in *The Journal of the American Medical Association,* 1933, Vol. 100.

head or cerebral system; it is a disease of the body-total, just as scarlet fever or measles is not a disease of the skin but a disorder of the total organism. In the case of the latter diseases, as their names imply, the disorder used once to be referred to the superficial appearances presented upon the skin. But these were only the manifest symptoms. With insanity, the disease continues to be referred to the superficial appearances expressed in the images and ideas projected from the head in the form of symbols. But these appearances are again only the manifest symptoms and no more constitute the disease itself than the skin eruption present in exanthematous diseases constitutes the essential pathology of these disorders.[2]

In the domain of structural medicine, as we know, it is not the aim of the physician to treat the symptoms of a disease in his attempt to remedy the condition. His remedial efforts are directed toward the disease itself. Of course medicine does not ignore the symptom. The symptom or sign or external manifestation is an indispensable guide in indicating the structural alterations responsible for the disease-process. But it is the disease itself toward which the remedial efforts of the physician are primarily directed. His efforts are directed toward those processes which embody the morphological cause of the disease as clinically definable.

Now let us consider the field of psychiatry. By psychiatry I mean the entire field of those interventive measures which are directed toward the study, diagnosis and treatment of mental disease. I mean the field that takes up with the patient, or with the patient's family, the problem of his mental trends—his ideas, his emotional conflicts, his dreams, his illusions and hallucinations, his mood-alternations of depression and elation, and his reminiscent retardations of adaptation generally; in short, those digressions of behavior from normal standards of conduct which lead to the diagnosis of mental illness. In the sphere of psychiatry, unlike the procedure in the domain of medicine elsewhere, all

[2] This, of course, holds equally for the latent content of a patient's wishes or ideas as they are unearthed in the process of psychoanalysis. For however deeply the libido has become entrenched through vicarious association, its interpretation is made possible only through the ideas or impressions to which it has thus become attached.

these *appearances* of disorder, all these signs of deviation from what is called "normal"—in other words, the *symptoms*—are regarded as constituting the disease itself and are accordingly the subject of direct study and treatment on the part of the psychiatrist. In the interpretation of psychiatry the patient's condition, broadly speaking, is regarded as a defect of adaptation or of education, and an analysis of his "complexes" is in order. Through this recourse the psychiatrist hopes to aid in the adjustment of the patient's digressive conduct or disjunctive habit-formations. The psychiatrist's procedure thus consists in an effort to meet ideas with ideas, mental expressions with mental expressions, thought and reasoning with thought and reasoning. Regarding the patient's mental appearances or symptoms as constituting the substance of the patient's disorder, the psychiatrist addresses himself to this so-called mental sphere with the idea of remedying in this manner the so-called mental disease of the patient. Thus the education or the reëducation of a patient's ideas and emotions through the substitution of other ideas or emotions is the accepted function of psychiatry.

I know it will be said that this is too narrow a definition of the field of mental medicine. It will be said that the cause of mental disease is frequently sought to-day not alone in ideas or mental impressions but also in constitutional disturbances, in disorders of the glandular system, in excess or inadequacy of secretion in this or that organ—that the thyroid or adrenal glands are now often the focus of remedial measures directed toward readjusting an imbalance in a patient's mental or emotional set-up.[8] No physician, of course, would for a moment overlook this position of medicine in its effort to discover and remove the pathogenic incident answerable for disordered mental states. But this, in a strict sense, is not psychiatry. This structural approach is obviously not a form of therapy that is primarily directed toward what is called "the psyche." And so I would remind the student

[8] Timme, Walter, "Pluriglandular Syndrome Involving Calcium Deficiency and Correlated with Behaviour Disturbances," *Endokrinologie* (Leipzig), 1929, Vol. V. pp. 324–330.

Brown, W. Langdon, "Endocrines and some Associated Psychoneuroses," *British Medical Journal*, 1932, Vol. I, pp. 223–226.

Curschmann, Hans, *Endocrine Disorders*, London, Oxford University Press, 1929.

that in the present discussion I am thinking only of the specific method of psychiatry or the method of therapy which seeks to remedy abnormal behavior, expressed symptomatically in false ideas or images, with measures which attempt to substitute for such false ideas or images, ideas and images which are presumably not false but which, being "normal," are held to be "true."

I probably seem to be giving undue emphasis to my definition of the method of psychiatry or of reëducation in relation to mental disease. I am, however, placing this reiterated stress upon the customary method of psychiatry, because, unless we focus our attention clearly upon the implications of this wide-spread method —a method which consists in applying ideas to ideas—unless we see it as a *social process,* we shall be unable to grasp the import of a phylogenetic study of the field of mental disease or to adopt a position toward mental disease that parallels the scientific attitude of the laboratory toward structural disease-processes in the domain of medicine elsewhere. It was only as we began to regard infectious diseases as a social or phyletic process and applied a laboratory technique to the discovery of the pathogenic incident which caused them that medicine first assumed a scientific attitude toward these disorders. Likewise it is only as we recognize the phyletic and structural significance of the process underlying the symptoms of mental disease that we shall be able to sense the necessity of an approach to these maladjustments that is social or phyletic in its scope.[4]

To restate, then, once more the current position of psychiatry, it consists in the effort of the physician to replace the patient's deviate or abnormal ideas with ideas which are normal or in line, as we say. This is the only point with which I am at the moment concerned. It is the point, however, upon which depends the understanding of the present thesis. Whatever views we may entertain that may be related to our subject, the view which is alone of significance to us in the present chapter lies in the proposition that psychiatry or mental medicine is treating mental expressions with mental expressions, that the method of psychiatry consists in an effort to alter a patient's digressions of thought,

[4] Burrow, Trigant, "The Need of an Analytic Psychiatry," *The American Journal of Psychiatry,* 1927, Vol. VI, pp. 485–492.

feeling and action by having him adopt thoughts, feelings and actions which correspond to the general average or to the common run of these expressions as they exist outside and around him.[5]

Keeping before us this position of psychiatry, I think we shall find that in its mental attitude psychiatry is by no means alone in its position. If we will regard the mental attitude of psychiatry from the background of race- or phylo-pathology, we shall see that psychiatry itself is really part of a wide-spread social process; that, in its procedure, psychiatry is really expressing an attitude that characterizes normal society generally. For, as we are aware, all education of the behavior of the individual and of the community is everywhere directed toward inculcating habits of behavior which are based upon *ideas* of conduct or upon mental and social images.[6] This is the recourse of the parent toward the conduct of the child. It is the recourse of the university toward the conduct of the student. It is the programme of the clergyman toward his congregation, and it is the position of the criminologist in respect to the criminal or delinquent. Ideas and mental images are the basis likewise of those behavior-reactions which are expressed socially in the form of political and international agreements and disagreements. The notion, therefore, that intellectual ideas and concepts are effective determinants of an organism's behavior, that they are biologically dynamic, is a social conviction that underlies our present-day thought and interchange throughout.

But this need not surprise us. After all, medicine originated in a belief in the efficacy or curative power of the idea. Belief in the magic efficacy of the idea as a curative agent was the beginning of primitive religion, and, as we know, superstition and religion

[5] Ribot long ago challenged the ephemeral nature of mental phenomena as customarily interpreted when he emphasized the neuromuscular elements inseparable from the process of attention: "Il faut toujours avoir présent à la mémoire ce principe fondamental: Tout état intellectuel est accompagné de manifestations physiques déterminées. La pensée n'est pas, comme beaucoup l'admettent encore par tradition, un événement qui se passe dans un monde suprasensible éthéré, insaisissable. Nous répétons avec Setchenoff: 'Pas de pensée sans expression,' c'est-à-dire la pensée est une parole ou un acte à l'état naissant, c'est-à-dire un commencement d'activité musculaire. Les formes sensorielles de l'attention témoignent assez clairement de ce principe pour que personne n'en doute." (Ribot, Théodule, *Psychologie de l'Attention*, Paris, Félix Alcan, 1889, p. 20.)

[6] See note 6, page 28.

marked the early origins of medicine. So that present-day medicine, with its stable, scientific criteria of investigation, is really the outgrowth of man's early belief in the efficacy of ideas as remedial agents in physical disease.[7] In the life of our primitive forebears not only mental but physical disease was treated solely with ideas. The idea connected with such healing amulets or curative talismans as the amber bead or the nutmeg hung about the neck as a remedy against rheumatism or arthritis is an instance of the early application of ideas as agents of cure for physical disorders. Thus medicine itself originated in mental medicine. And to-day, the more primitive the people, the more tenaciously they cling to their belief in treating all illness with ideas, or with ideas projected into objects or translated into ritual and incantation.

We have seen these measures of relief operating socially in such wide-spread community instances as occur in the cures reputed to the miraculous waters of Lourdes. They are widely operative in the ideas actuating such a religious sect as Christian Science. And it is idle to say that these mental opiates do not relieve mental symptoms, or that such relief does not often constitute as legitimate a "cure" when employed by the religious healer, for all his superstition and fanaticism, as when employed by physicians engaged in the practice of mental medicine.[8] The difference consists merely in the nature of the idea or social image employed. The truth is, everybody "believes in" psychic remedies. For belief in the efficacious agency of the idea is universal. But the prevalence of ideas in man's present stage of development is not a guaranty of the soundness of the ideas prevalent.

In describing a method of investigation which offers a basis that is different from this habitual trend, I have made reference to *phyloanalysis* and to *phylopathology,* and I should now explain the specific meaning I have in mind. I have used the term "phylopathology" to express a disordered condition affecting the

[7] Pierre Janet says: "We have been led to surmise that psychological phenomena play a notable part in miraculous cures, and we have realized that miracles still constitute today one of the most elementary among psychotherapeutic methods." *Psychological Healing,* New York, The Macmillan Co., 1925, Vol. I, p. 52.

[8] "Psychotherapy does not yet exist. We are merely beginning to see what it ought to be, and what in due time it will become." Janet, Pierre, *ibid.,* Vol. II, p. 1206.

behavior of man as a race, as this condition was disclosed through the experiments my associates and I conducted in the reactions of social groups composed of normal and neurotic subjects. The specific method of analysis employed I called "phyloanalysis" (Gr. *φῦλον*, race or species). Abrogating our customary inter-ideational habits of exchange, setting aside words, ideas and opinions, our effort has been to release the immediate feeling-content found to underlie these outer manifestations. In this attempt our researches have consistently converged upon reactions associated with the process of attention—not so much upon the process ordinarily understood as intellectual or cerebral attention with its concomitant physiological tensions and strains, but upon those primary physiological tensions and alterations which are expressed by the organism as a whole and which were the natural equipment of man prior to his invention of language or to his acquirement of the process of cerebral attention.[9] Regarding attention as the organism's medium of contact with the actualities about it, experimentation has led to the differentiation of two modes of attention: the first consists in those general tensional adjustments which relate the organism as a whole to the total object or environment; the second consists in those specific tensional adjustments which relate the brain and its external senses to the object or environment by means of the significative part, or the sign, selected to represent it, namely, the symbol or the idea. The first species of attention I have called the integral or systemic process of attention, and the second, which is symbolic or cerebral —the process we ordinarily know as intellectual attention—I have called the partitive process of attention. I have called this process "partitive" not only because it is characteristic of this mode of attention that the organism selects a part-element or item of an object which thereafter constitutes the sign or symbol of it, but also because this process is performed through the specific part-function mediated through the special exteroceptive senses of the head in conjunction with the laryngeal system.

[9] Kempf, E. J., *The Autonomic Functions and the Personality*, New York and Washington, Nervous and Mental Disease Publishing Co., 1918.
Psychopathology, St. Louis, C. V. Mosby, 1920.
Cannon, W. B., *Bodily Changes in Pain, Hunger, Fear and Rage*, New York, Appleton, 1915.

The partitive mode of attention, however, has a further characteristic which must be included in a complete definition of it, and this characteristic is of central significance in the present thesis. This central characteristic of the partitive process of attention consists of the invariable involvement of secondary and extraneous affect-elements which tend to re-route the organism's primary feeling, or to partition it off, so to speak, from the organism's primary empathic channels of outlet. In the process of man's evolution this mechanism has become systematized inter-individually or socially throughout the species, with the result that the partitive (affective) system now reacts repercussively upon the total system to hinder or impair the direct expression of the organism in its primary and total motivation.[10]

To reinforce our meaning, then, we have the primary, integral type of attention and the subsequently acquired symbolic, partitive type of attention. But in the partitive or symbolic type of attention we have also the involvement of affect. That is, in the course of our evolution, the original partitive or symbolic mode of attention has increasingly formed an artificial linkage with elements of the empathic system. The interpolation of this artificial linkage is extremely significant as it bears upon the incidental impediments to man's bionomic development. It is important that the reader recognize the practical social significance of this affect-involvement. For the partitive type of attention, with its involvement of affect, has now become completely entangled with the original symbolic or cerebral type of attention. So that the term *partitive* as used throughout this work is purposely intended to denote both the original symbolic mode of attention and its now currently involved affective reaction.

In the attempt to deal practically with the neurosis or with the confusion arising in man's adaptation bionomically, we are confronted with a problem that is morphological. Perhaps it will seem that I am using the term *morphology* in a somewhat unusual application. The term *morphology,* as I here employ it, has to do with processes of evolution that bear upon the functional adaptation of man as a species. In regard, however, to the bionomic

[10] Burrow, Trigant, *The Structure of Insanity—A Study in Phylopathology,* Psyche Miniatures, London, Kegan Paul, Trench, Trubner & Co., 1932.

adaptation of man from the point of view of his morphology there are required at the outset certain basic adjustments in our habitual methods of interpreting the separate element or individual now too commonly regarded as a discrete phenomenon.

With the innovation of the organism's symbolic system of reactions and its concomitantly wider range of adaptation, apparently there came about the adoption of sectors of contact and communication with the outer world in which the radii of attention and interest are tangential to the organism's total bionomic axis of rapport. This adventitious, marginal domain that is secondary to the organism's total focus of rapport is the domain that occupies itself with the discrete, separate items belonging to the partial, symbolic or connotative system. This radial, linear or punctate type of attention, with its specific neural correlates, possesses a morphological definition that sharply demarcates it from the more diffused, generalized process of attention through which the organism as a whole is related to the environment as a whole. But the difference between these two types of attention and their relation to the organism's neuromuscular system will be considered again in Chapter Nine in which we shall deal more fully with the significance of these two types of attention from the point of view of their physiology.

In attempting to deal at all specifically with the process of attention, it would be well if we might discourage in ourselves certain prepossessions which we now entertain as a result of the type of attention we habitually apply to the process of attention itself. Attention has come to mean for us only the function we habitually experience when focusing "mentally" upon this or that object, or image of an object. The sharply directive pencil or focus of interest with which we apply ourselves mentally to a specific object or phenomenon constitutes an example of what is for us now practically the sum of the process understood as "attention." This mental penciling upon an item, whether actual object or retained image, is, however, from the point of view of man's evolution, a very recent and specialized acquisition. In an earlier period in the history of the race the organism's bionomic relation to its outer environment was something very different. Whatever was external to the organism engaged its interest as a

total function. In its relation to the outer world the process of attention originally represented far more a coördination of the organism *with* the object than the directing of its interest *at* the object. Thus in its total relation to its object the organism's adjustment was primarily what we may call one of *co*-tention rather than the merely restricted, symbolic process of *at*-tention. This readjustment between inner and outer definition in respect to the surrounding world of phenomena is implicit in the nature of the present study, and the necessity for insistence upon it will become increasingly evident with the gradual development of its fuller implications.

So that, however unpalatable it may be to our established habit-patterns and constructs, it is necessary that we readjust many of our partitively systematized conceptions. Outstanding among them, for example, is the notion of "wholeness" or of "the organism as a whole." In order to understand what is meant by the "total organism" or by "the organism as a whole," as these terms are used in phylopathology, one should at the outset distinguish carefully between the *organic whole,* and the *collective whole.* While the collective whole means the entire sum of the parts composing a unit or substance, the organic whole refers to the organism's unity of function. As must be obvious in respect to the total phylum, the function or the reaction of "the organism as a whole" need not involve the entire sum of the parts composing the organism, nor even any considerable portion of it. The organism's total function or the function of the organism as a whole is one that is uncomplicated or undivided by reactions which are partial, separate or secondarily differentiated from the organism's primary reaction. In other words, the organism's total reaction refers to an integral behavior-pattern in contrast to a partial behavior-pattern and has no bearing upon a structural entity composed of a sum of parts. This distinction is one to be treasured throughout these pages as a safeguard against much futile discourse.

Due to the development of language or the symbol, man's feelings, interests and preoccupations as a race tend now to centre almost exclusively in the cerebral region. His social intellectualities, or his interchange inter-individually through mental ideas or images, tend to appropriate to themselves feelings and activities

which once occupied the organism as a whole.[11] Accordingly, the specialized area represented in the forebrain or neopallium, and its connections with adjacent special senses, supersedes and tends in its function even to exclude the reactions which, through the diencephalon, mediate the function expressive of man's organism as a total process.[12] This enormous disproportion of function now directed toward the cortical or neopallial segment, due to the preponderant use of the symbol, has made far-reaching and unsuspected encroachments upon the primary feelings and sensations of man as a total organism. But what is of practical moment to the physician or neuropathologist is the circumstance that to the degree in which this over-specialization of function has occurred in the cerebral segment *there have been produced in this region physiological tensions and strains which are definitely perceptible as processes alien to the organism as a whole.* Apparently these tensions and strains are locally perceptible because of their disproportionate activity in this region due, as I have said, to displaced feeling-reactions which have come to attach themselves arbitrarily to the cortical image or symbol in the form of affects.[13] These partitive tensions are perceptible because of the marked differentiation and distortion of function in this area consequent upon an interruption to the systemic distribution and equilibration of tensions belonging to the organism as a total reaction. An instance of this cannulation of the organism's total feeling into a local affect is dramatically presented in stuttering patients in whom the clinical disorder consists in an exaggerated shift of interest or attention to the symbolic segment.[14] It is the impairment in the

[11] See note 10, page 114.

[12] An interesting discussion of the contrast between the total-action pattern and the partial-action pattern, as demonstrated in the neural growth of the salamander, is contained in a paper by Dr. George E. Coghill, "The Biologic Basis of Conflict in Behavior," *The Psychoanalytic Review,* 1933, Vol. XX, pp. 1–4. See also Coghill's "Individuation *versus* Integration in the Development of Behavior," *The Journal of General Psychology,* 1930, Vol. 3, pp. 431–435, and "The Early Development of Behavior in Amblystoma and in Man," *Archives of Neurology and Psychiatry,* 1929, Vol. 21, pp. 989–1009.

[13] In a very interesting article on "The Somato-Psyche in Psychiatry and Social Psychology" (*The Journal of Abnormal and Social Psychology,* 1934, Vol. XXIX, pp. 314–327), Dr. Paul Schilder shows the extent to which a patient may project images even of his own body-parts. This article presents a highly imaginative treatment of a very complex theme.

[14] Dorsey, John M., "The Psychology of the Person Who Stutters," *The Psychoanalytic Review,* 1935, Vol. XXII, pp. 25–35.

total organism's harmonious functioning caused by a specific deviation and distortion of tension in the particular body-part comprising the organism's symbolic segment that constitutes the essential thesis in phylopathology.

It must be recalled that the emphasis of the work of my associates and myself is not so much that of outsiders *looking at* these structural processes as of insiders *getting at* them. Our interest is not in the surface appearances man presents in his ideas and their adherent affects, but in the deeper behavioral composition of which these surface appearances are the symptoms. It is significant that in the evolutionary view-point of the comparative anatomist and the neurobiologist there is contained much historic evidence to which our trend finds a parallel. I am reminded at the moment of a passage in Morley Roberts' *Malignancy and Evolution:* "There is no denying that the gradual encroachments of the fore-brain and the growth of the pyramidal tract, though essential parts of a gradual adaptation to the stimuli of an increasingly complex environment, are largely at the expense of the instincts, and therefore at the expense of the endocrines which dominate ancient nerve tracts and reflexly make up what we call instincts. The relevance of these considerations to modern civilization, over-rapid social evolution, and therefore to malignancy, may be doubtful to some and not to others. I am content if they merely suggest real reasons for what we are accustomed to look on as moral, religious and psychic struggles. The body lives with the brain and often protests. For as the earlier migrants and invaders conquered the muscles, so the fore-brain endeavours to dominate the man." [15]

Returning now to the method which is habitual to medicine in respect to manifest physical disturbances, whether functional or organic, it is obvious that what the physician attempts to do is to reëstablish the harmonious functioning of the patient's organism as a whole by removing the presence of the divergent or deviate process that has interfered with the total organism's harmonious activity. He directs his treatment toward restoring the totality of function circumscribed within the individual's own organism. The

[15] Roberts, Morley, *Malignancy and Evolution,* London, Eveleigh Nash & Grayson, 1926, p. 255.

physician does not look outside the patient's organism for ideas of function with which to imbue the patient, but through the use of medical or physiological agencies he seeks to remove the abnormal process that has disturbed the body's total function.

Of course, in studying the symptoms or signs of a disease-process, a physician is very glad to have the patient's assistance in his quest. No physician fails to ask a patient "how he feels," how the situation appears to *him*. If the disease is a disorder of the stomach, for example, the physician does not fail to elicit from the patient the nature of the pain—its duration, its exact location, whether constant or intermittent, whether increased before or after eating, whether influenced by change of posture, and like indications. He inquires carefully into all of the patient's ideas and opinions as they may bear upon the actual physiological disturbance. But he does not pretend to treat these opinions or ideas which accompany and which are the mental (symbolic) reflection of the patient's bodily lesion. He does not treat these appearances or symptoms secondarily projected from the patient's head in the form of images and ideas. These opinions and ideas are, of course, mere subjective signs or indicators of the physiological disturbance requiring treatment.

Now let us consider the situation in respect to what are called mental diseases. Let us take a specific case. It is that of a young man aged twenty-four who, according to his own words, "can't make the grade." He has become depressed and withdrawn and has lost interest in his work. His work, by the way, is that of a student of biology. The case is typical enough. The patient is morbidly over-sensitive, is suspicious, presents marked mood-variations, illusions, ideas of reference and reactions of guilt, including self-reproaches in respect to his sex life. When we come to ask him how he feels, what are his opinions and ideas about himself, what has brought him to the clinic, in short, when we seek to elicit the patient's various subjective sensations and reactions, whether appearing in his conscious expressions or disclosed through an analysis of his unconscious imagery—in his dreams for example—we find that the patient's major preoccupation centres about the attitude of his father, that it centres about his father's ideas and opinions in regard to him. His father, he tells us, is

severe with him, does not understand him, is harsh, sarcastic, and mistreats him. This gives the really salient point in the clinical picture—the patient's *ideas and opinions* of his father's *ideas and opinions* about him. Now, then, are we to take the habitual attitude and treat this young man's opinions and ideas in regard to his father? That would be the normal, psychiatric procedure.

Of course, as often as not in these cases, the person who is made the object of a patient's fixation has done nothing that can be demonstrated as warranting the patient's attitude of dependence or suspicion toward him. But as we investigate the ideas and opinions in this case, we find, through the assistance of the social worker, that in point of fact the father *is* harsh, *is* severe, *is* sarcastic and *does* mistreat his son. So that from the standpoint of therapy we can hardly "cure" the son's ideas and opinions, because we should be curing him of ideas and opinions which, in a normal reckoning, are quite correct.[16] Or should we attempt to cure the son in the absence of a cure of the father? As a matter of fact the father, though regarded as "normal," has exactly the same opinions and ideas in regard to the son. For, upon being induced to come to the clinic, he tells us that his son is sarcastic, inconsiderate, that he does not understand him, does not realize that he is doing everything for his good, and so on. Words, ideas and opinions, you see, *versus* words, ideas and opinions. And the situation is further complicated by the words and ideas of the remaining members of the household. The younger brothers of the patient fully coincide with him in his ideas about the father, while an older brother quite as strongly espouses the father's cause. The mother's ideas or opinions, again, are in complete sympathy with the son, while the plot is further thickened by the older sister's full sympathy with and corroboration of the father. Here is represented the quite typical hodgepodge of utterly arbitrary ideas and opinions which, when witnessed in the single individual, constitute the habitual preoccupation of current psychotherapy.

[16] Syz, Hans, "On a Social Approach to Neurotic Conditions," *The Journal of Nervous and Mental Disease,* 1927, Vol. 66, pp. 601–615.

"Remarks on Group Analysis," *The American Journal of Psychiatry,* 1928, Vol. VIII, pp. 141–148.

"The Concept of the Organism-as-a-Whole and its Application to Clinical Situations," *Human Biology,* 1936, Vol. 8, pp. 489–507.

Yet this domestic situation represents in miniature the ideas and opinions or the social interactions that constitute the preoccupation of the normal world at large. For the sum of accidental and habitual impressions that forms our minds represents in large measure a mere systematized aggregation of wishful judgments, a mere constellation of prejudices.[17] Yet these are the minds with which we do our "thinking" and our "feeling," with which we see ourselves and other people, with which we determine our own behavior and that of those about us; in short, the minds in which presumably we think and move and have our being!

In view of this unpropitious heritage it is not to be wondered at that man has so great difficulty in placing before himself the specific tensions whereof his disordered "mental" reactions are the outer reflection; that, like our patient, he is so reluctant to turn about and bring an objective laboratory observation to bear upon these internal neural concomitants of his own thinking and feeling processes.[18] For the rub comes precisely with the obstacles to the recognition of our distorted feeling-reactions *as a social condition.* For instance, the so-called normal affect-images projected by the patient's father, mother, sister and brothers, and reflected in the affect-reactions of the community about him, are

[17] In Gardner and Lois Barclay Murphy's *Experimental Social Psychology* (New York, Harper & Brothers, 1931, p. 688) there is this pertinent passage: "That we carry around with us plenty of superstitions—political, economic, ethical, as well as religious—common observation . . . will testify. We live in a world of irrationalities; and from the point of view of the year 3000 we shall probably be seen to have been swimming in a sea of superstition not so profoundly different from that of the time of Attila."

[18] The growing appreciation of the utter lack of a scientific basis for determining the mental and social factors in human behavior has recently been clearly set forth in the statements of a number of scientific writers. (For example: Cannon, W. B., Address before the Alumni of the Massachusetts Institute of Technology, Boston, February 5, 1933; Schaar, B. E., "Scientific Method and Social Relations," *Science,* 1932, Vol. 76, pp. 551–557; Weeks, A. D., "Will There Be an Age of Social Invention?" *The Scientific Monthly,* 1932, Vol. XXXV, pp. 366–370.) But man's ineptness of observation in regard to his own behavior is not to be wondered at. After all, the obstacles to clear perception marked also the early beginnings of the laboratories of science generally. As Professor C.-E. A. Winslow has said: "It is an extraordinary evidence of the fact that we see with our minds and not our eyes that this phenomenon [the phenomenon of bacterial variability] should have remained so long undiscovered. For thirty years, bacteriologists had had rough and smooth colonies staring them in the face and had refused to see them because they did not fit into preconceived concepts of what should be there." (Address delivered before the Society of American Bacteriologists, Baltimore, December 28, 1931, published in *Science,* 1932, Vol. 75, p. 121.)

from a biological view-point as distorted as his own. The recognition, therefore, of the hidden cause of mental disorder in the patient will avail us little in the absence of the recognition of the cause of mental aberration as a community condition. This, however, is not discouraging. As important scientifically as was the discovery of the germ of tuberculosis, it was an utterly insignificant disclosure except as the community was gradually educated to the recognition of the pandemic, community nature of the tubercle bacillus.

We may now turn again to the case referred to under circumstances in which the condition is approached on the basis of a purely physiological conflict—on the basis of a conflict between those organic tensions and strains which underlie the attention of the organism as a total systemic function and those physiological concomitants of cerebral, projective attention as they have become colored by divisive, segmented feelings or by displaced affective components. When we come to examine the patient's processes from this physiological basis of inquiry we find that he is automatically driven to an exaggerated use of the symbolic or cortical function, and that through this exaggeration and misuse he attempts to project toward the social environment feelings and sensations which exist only as functions internal and integral to his own organism.

As one learns through the technique of phyloanalysis [19] to centre his integral attention upon his own partitive processes of attention, the mechanism appears to be this: In his intellectual projections or in his perceptual relations to persons or to objects through the mechanism of the symbol, the patient's *interest* or *feeling* has also come to be attached to the symbol of these persons or objects; so that his interest or feeling, in penciling upon the outer item, tends to project itself along these same perceptual or symbolic avenues of focus. That is, the patient's *total feeling* tends to follow the neural path specific to his *selective perception*—the path that connects the cerebrum and the external senses, chiefly the eyes and the region adjacent to them, in their purely perceptual, symbolic

[19] A clear and detailed description of the phyloanalytic procedure from the point of view of the student-participant will be found in William Galt's *Phyloanalysis—A Study in the Group or Phyletic Method of Behaviour-Analysis*, Psyche Miniature Series, London, Kegan Paul, Trench, Trubner & Co., 1933.

function. In this way the patient falsely projects feelings and sensations whose only basis of reality is his own arbitrary, symbolic projection of them. Such efforts to project symbolically reactions which belong to the total organism entail a physiological congestion or blocking, and there result the neuromuscular tensions and sensations consistent with this artificially improvised channel of feeling-discharge. The psychological concomitants of these neuromuscular tensions constitute the factor which I have called the *social image*.[20] The social image is that purely psychological factor in man's inter-ideational or socio-symbolic exchange which results when a primary total sensation attempts to push through the restricted, partitive path of the symbol or image and becomes impacted and artificially converted into the distorted composite of an image-affect.

This composite formation, this socio-affective image-exchange, or social image, is a purely projective mechanism. Its motivation is entirely distinct from and independent of the primary motivation of the organism as a whole. The artificial coalescence of these two separate channels of motivation and its effect in diverting the expression of the organism's behavior as a totality is, according to our phyloanalytic findings, the crux of the organism's neurosis or conflict as it exists both individually and socially. For it has been shown through actual experimentation that the application of a technique which acts as a constant barrier to the passage of social affects along these habitual channels of inter-ideational exchange gradually deprives these projections of their artificial feeling-content, and to the same degree these partitive affects become reassimilated within the patient's organism as primary total feelings.[21] In this way reactions which have become the expression of a sheer misplacement of the organism's integral feelings are re-routed into their natural channels and now operate once more in support of the organism as a total process.

In the case cited, therefore, all interventive measures were reduced to the single unitary aim of affording the patient facility in the use of a technique through which he himself would restore

[20] See note 6, page 28.

[21] Burrow, Trigant, "The Reabsorbed Affect and Its Elimination," *The British Journal of Medical Psychology*, 1926, Vol. VI, pp. 209–218.

those reactions which had become physiologically deflected and which tended habitually to clutter the symbolic, cerebral avenues of interchange. Our corrective measures were centred toward re-directing these deflected tensional alterations into the systemic paths of reaction which belong to the organism as a whole. No effort whatever was made in the direction of altering the patient's ideas, illusions, affect-references, ruminations or other "mental" symptoms, yet the patient's adjustment to himself and to his social environment was completely transformed. While the sole focus of interest was directed toward permitting the patient to recognize his internal tensions and skews, the corrective results were straightway registered in the sphere of his external adaptation. There was no discussion, no reference whatever to his father or to their mutual "ideas" of one another, but the patient became entirely free of his former projected concern as to his father's or any one else's ideas or projections in regard to him. He has resumed interest in his studies, and his whole subjective attitude toward his presumably subjective "symptoms" has become converted into a clear objective sense of their underlying physiological meaning within him.[22] The emphasis, then, of our altered position is an emphasis upon the physiology of the interreactions which occur *within* the organism, individual and phyletic, as contrasted with those interreactions which are purely inter-ideational, symbolic or "mental."

As normal human beings we are all so completely under the sway of the mental and symbolic in our ordinary interest and interchange that it is exceedingly difficult to acquire an objective perception of these partitive processes now "normally" habitual to us. We do not sense the continuity between these processes as they affect the reactions of the clinical patient and as they affect the reactions of ourselves as "normal" or psychiatric onlookers in relation to them. But deep down under the skin, our normal or neurotic prepossessions, as indeed the psychiatric prepossessions with which we attempt to deal with them, are phylogenetically, like "The Colonel's Lady an' Judy O'Grady," all offspring of a common parentage, notwithstanding our firm determination now to disavow so questionable a patrimony.

[22] See note 2, page 46.

To state the position of phylobiology in regard to the patient: As far as concerns the patient, the attitude that is expressed in the phenomenon of nervous and mental disorders, or in disorders of behavior, is that in which an individual has made or has permitted other people to make unreal (partitive) difficulties appear to him as real, and in which accordingly he adopts or permits other people to adopt in his behalf remedies which are equally partitive and unreal, but which have now been made to appear as real as the "difficulties" they are presumed to "cure." In this connection, however, the extraordinary thing is that as a result of our researches in phyloanalysis this same attitude was found to be a universal characteristic of our so-called normal communities!

Psychopathologists who are assured that the neurotic patient represents an isolated specimen of behavior and who do not see the behavior of the neurotic individual as the mere symbol of a social neurosis are naturally no little excited to have from me the description of a "particular case" and a detailed account of its response to the phyloanalytic method of readjustment. But in the absence of a realization of their own need of readjustment as homogeneous elements in a total and primarily motivated organism or phylum, my colleagues fail to recognize the essential principle of phylobiology. As presumable "outsiders" trying vainly to apprehend the meaning of the organism's reintegration through the process of phyloanalysis, they fail to realize that one's own ontogenetic relation to a phylogenetic dissociation (the partitive deflection of the organism's primary attention or interest) is the only "case" there is. In other words, where the only disturbance there is is phylogenetic, the only case there is is one's own ontogenetic involvement in it.[28]

[28] A recent work—*Research in Dementia Precox,* 1936, by Nolan D. C. Lewis—gives an excellent résumé of the subject, and brings up to date the various psychopathological interpretations and methods respecting this disease-process. But this author does not reckon at all with the bearing of normal processes upon the incidence of this disorder. His approach, like that of other psychiatrists, takes no account of those normal processes within himself which bear an organic relation to the processes characteristic of these patients. That is, it takes no account of the average imbalance of tensions which the psychiatrist shares with the community generally. We shall not deal adequately with the obvious disorder recognized as dementia praecox until we have dealt adequately with the no less obvious disorder we refuse to recognize as *dementia normalis!*

While undoubtedly there are individuals who present marked psychopathic deviation in contrast to the rest of the community, it is not the special nature of their behavior-disorder that it departs from that of a community that is healthily adapted. These cases represent but sharply defined expressions of a disorder whose essential pathology exists equally within the social community throughout. In this sense—in this very real sense the behavior of the neurotic or psychotic patient is neither isolated nor special, and the reintegration of these personalities within the unit or whole constituting the human species can only be indefinitely postponed so long as the community resists the recognition of its own community involvement in an equally partitive deflection of its own thinking and feeling processes. Where there is lacking among psychopathologists as a community the practical application of this phylobiological principle inherent in the phyletic organism as a whole we can only peer outside ourselves for the myth of the special "case" supposedly existing apart from the organism of man as a race or phylum. For in the absence of this broader phylobiological conception of our individual and community disorders we are denying to man his need for a fundamental reintegration as a total organism. Indeed in the absence of this organismic basis the conception of the total organism loses completely its power of application as a biological principle. Instead of making the concept of the "organism as a whole" an inclusive, affirmative note of constructive behavior, we are making of it but sounding brass and a tinkling cymbal.

It will doubtless assist us still further toward gaining a practical sense of our own subjective involvement in emotional conflicts and dissociations that are identical with those of the neurotic, if we will consider certain quite homely incidents illustrative of our part in the daily normal episodes that make up the current human scene. Our very interest in the subjective material of our psychiatric case-histories is a telltale of our own subjective involvement in them. For, like the novel or short story, the psychiatric clinical history is of interest only to the degree in which we can identify our ideas, our prejudices and our emotions partitively with those of the patient. That is why we demand of our psychiatric case-histories an engaging plot and exciting incidents.

For like literary tales of adventure these clinical case-histories must hold the listener's attention and arouse his curiosity.

Dickens' novel, *Great Expectations,* affords an excellent paradigm of the dramatic quality inseparable from the characteristic psychopathological history. This eminently human narrative contains the first and most typical clinical record of my earliest recollections. It is told, the reader may recall, by one Philip Pirrip, aged seven, regarding the insane extravagances of Miss Havisham, as he related them to the assembled Pirrips who, gathering about him on his return each evening, would hang breathless upon his every word. One may readily picture how his stirring recital of his strange patron's unprecedented vagaries gained momentum under the stimulus of the family's bourgeois credulities as the now over-stimulated child, finding himself the centre of their interest, more and more elaborated his theme in order to keep attuned to the ascending pitch of their clinical expectations. The Havishams as members of the cast, the Pirrips as audience, and Master Philip Pirrip as youthful entrepreneur, present a close prototype to the clinical setting throughout normality to-day with its arbitrary featuring of the element of the dramatic, wherein the patients are assigned the rôle of performers, the psychological public that of audience, and the psychiatrist is as arbitrarily cast for the part of general stage director.

To the earnest medical reader who senses the biological import of our phylopathological basis, the case cited a moment ago will make a very different appeal from that of the case that ordinarily possesses interest for the psychiatric student or social worker. For such a reader our phyloanalytic "case" will be as devoid of the element of dramatic coloring or suspense as a sober, objective description setting forth the generic habits of crustaceans or of the fruit-fly would be to a student of biology. As dear to the "normal" or psychological onlooker as is the dramatic incident or the element of emotional suspense, I would indeed be glad if the case I have cited might appear to him as completely lacking in such a type of appeal as a carcinoma or an attack of asthma is lacking in dramatic possibilities for the patient who finds himself in the throes of such a disorder. I would be glad if the reader might realize that he too is neurotic, that in his own

community involvement in a behavior-disorder that is generic to man he is essentially in a situation that is identical with that of the neurotic patient I have described. Like this neurotic patient the reader also is not without his involvement in social and family images—his preoccupation with the ideas he has of other people and that other people have of him, his inertias and inhibitions due to his mental reflection and infolding upon his own self-image along with the rest of the symptoms resulting from the organism's deflection of its primary motivation into the secondary, reversed motivation that characterizes man in his so-called normal processes to-day. So that I would be glad if the reader might realize that, like my associates and myself, he too, in this broader organismic sense, is an embodiment of the case I have cited. For here in the phenomenon of man's internally disordered tensions, with their concomitant disturbance in outer adaptation, our "case" is as pathologically typical as that of a malignant growth, or as a respiratory or allergic disfunction. Under however varying aspects, the deviation in the case of our neurotic student is a deviation that is "normal." It is a disorder involving the physiological process of attention, and this disordered process is phylogenetic. Such a deviation represents the reader's neurosis and mine. It represents a condition existing on the inside of the organism of man as a race, as this internal anomaly expresses itself to-day in a common disfunction within our common species. So that the reader is given due notice that in the phylopathological case-history he will find an entire lack of the emotional appeal so widely responsible for the quality of interest that too often attracts individuals, professional and lay, to the problems of mental medicine as they are now presented in the court, in the clinic and in the consultation room.

The reader is no doubt aware that within psychiatric circles there have recently begun to appear various forms of collective analysis to which their sponsors have applied the name of "group-analysis." But when one considers the integral basis of the group-analysis upon which my associates and I entered years ago along with our students and patients, our method is as different from these species of "group-analysis" as day from night. It differs from these recent innovations in "group-analysis" in the

same way that the approach of a biologist to animal behavior differs from that of the clergyman to his congregation. The intrinsic difference lies in the circumstance that the psychiatrists who conduct these congregational forms of group-analysis do not include themselves and their own processes in the material coming under observation. They examine the material presented by the patients collectively and attempt to "analyze" and correct this behavior in accordance with their preconceived ideas of what social behavior should be. That is, adhering to the restricted standpoint of the organism's symbolic, projective segment of behavior they examine ideas with ideas.

As for myself the realization has been forced upon me over the years that a psychological, a projective or partitive species of analysis fails ipso facto to include the analyst along with the analysands. Only a method of analysis which rests upon a biological principle of organic unity that extends throughout the phylum is competent to include *material and observer* in a common process of social synthesis and reintegration. Because of the scientific background of the biologist who examines an individual rabbit, he necessarily examines the species rabbit. The scientific background of the human biologist (the phylobiologist) must also be such that in examining the human individual, he necessarily examines the human species. Now if in his autotransference he regards himself as a special element or agent and so leaves out of his "generic" examination of the species man his own relation to it, he is in so far not a biologist, precisely as the examiner of the species rabbit would not be a biologist if, because of his special tenderness toward his own pet rabbit, he were to leave out of account this particular rabbit and its relation to the species *Lepus cuniculus* as a whole.

With my students and myself, our basic approach presupposed such a phylobiological principle of unity as primarily integrates the elements composing the species of man as a totality. Phyloanalysis meant for us precisely the integral embodiment within ourselves of the concept of the organism as a phyletic whole. It meant then and it means to-day nothing else. Where in our early phyloanalytic procedure we found the tendency of certain individuals among us to stand off from the rest of their community,

group or species in order to lead them toward a clearer vision of our human needs—a tendency not unlike that of the evangelist who would lead his flock into the ways of righteousness—we used to apply to such tendencies the facetious epithet of "troupe-analysis," so utterly alien to our integral biological purpose was this preceptive and authoritarian interpretation of our basic group principles. In the sphere of biology such aspirations to leadership are simply phantastic. One might as well expect a special cell to stand off from the rest of the elements composing the blood stream and attempt to direct his fellow corpuscles through the devious channels of the vascular system!

Once more, then, I must remind the student that in the broader view-point of phylobiology he is required to summon to himself modifications of outlook, and still more of *in*look, that rest upon a completely altered frame of reference. It is required that his approach to the problem of man's behavior-maladjustments, even though these maladjustments are internal and intrinsic to himself, shall be rendered rigidly objective. No longer may the individual maintain the attitude now everywhere expressed by him in such pious commonplaces as, "*I* am fully justified," "*I* love dearly," "*I* believe in doing the right thing," "*I* am not appreciated," "*I* suffer, and nobody understands me," "*I* am a real patriot," etc. And no more can he say of the "I" represented in the person before him, "*You* are wonderful," "*You* are everything to me." Nor can he say, "*You* are unfair, unkind, untrue," "*You* are the real cause of all my difficulties," etc. This type of subjective interchange, notwithstanding that it constitutes to date the structure of man's social reactions, domestic and political, industrial and economic, individual and international, has completely lacked the test of those definite criteria of objective observation we are accustomed to expect in the laboratory of controlled experimentation. The conclusions that have been arbitrarily formed in the absence of such ponderable elements must therefore pass into the discard.[24]

The study and regulation of the organism's total function entails the observation *of* the organism as a whole *by* the organism

[24] Burrow, Trigant, "The Autonomy of the 'I' from the Standpoint of Group Analysis," *Psyche* (London), 1928, Vol. VIII, pp. 35–50.

as a whole. It further entails the organism's observation of its partitive, specialized function of attention as a phyletically complete system (even if secondary and symbolic) in its relation to the organism's cotentive system as a totality. No mere partitive peering at this or that partitive phenomenon is here of avail. But the demand for an altered frame of reference internal to the organism is decisive and unequivocal. For in this inquiry the object which we are investigating is the very organ with which we are investigating it. The organism and its brain as a whole is investigating the organism and its brain as a whole. This recoiling of the observer as subject upon the observer as object is, as far as I know, unique in the history of scientific investigation.

I realize that in response to the statement that the study of the organism as a whole is the function of the whole organism one might readily venture the comment that it savors of lifting oneself by one's own boot straps. So it does. Yet, to adhere to the implications of the parallel, however laconic, what other force has lifted the organism of man from the state of the lowest unicellular form to the highly differentiated personality he now is but the consistently creative processes of integration resident and motivated within the organism of man himself? Surely it has been no force existing outside of himself, no force existing as an element extraneous to the phyletic continuity of function of which each individual of the species is an organic part. While it is true that in a mechanical sense man cannot lift himself by his own boot straps, it is equally true that in no sense can he, as he now assumes, unite himself to his total phyletic organism by tugging at the "psychic" straps of his cortical, symbolic system, resting as it does upon a purely secondary, partitive mode of image-projection. In our efforts of reorientation, as I have repeatedly insisted, we are summarily called upon to leave behind us our own cherished affect-attachments—those precious images whose "meaning" we owe solely to the artificial adhesions existing in such popular forms and codes as our social likes and dislikes, our beliefs and disbeliefs, in "you" *versus* "me," in "right" and "wrong," in short, in man's infinite range of absolutistic prejudices now affectively projected before him in his obsessively restless dichotomy *for* and *against*.

Holding, as we have, to this more consistent laboratory attitude and directing our observations toward the interreactions occurring currently among individuals composing social groups, it was found that so-called mental disorder does not consist in a disparity in a patient's ideas or in his conduct, nor in a disagreement of ideas or of conduct between one individual and another, whether physician and patient, or father and son. It was found that, while the symptomatology or outer appearances of mental disorder with its transference and resistance, its withdrawal or dependence, are always inter-individual or social, the essential disorder does not consist in a disagreement between the thoughts or the ideas projected from the brain of the mentally ill individual as contrasted with the prevailing norm of thoughts or ideas projected from the brains of a community of individuals. These ideas are merely the outer symptoms. But, as is the case throughout the domain of medicine elsewhere, it was found that the disease from which the mentally disturbed patient suffers is circumscribed within his own body-processes and that this disease consists in a disagreement or disparity between the function of his own brain and that of his own organism as a whole.[25] Setting aside our psychiatric logomachies, we found the disorder to consist in a state of tension or alteration which, roughly speaking, is specific to the prosencephalic and adjacent portions of the patient's organism in contrast to the general, systemic state of tension existing throughout his body generally. The real disorder consists in a physiological conflict between the two species of attention or adaptation through which the organism is related to the external world—between those general internal tensional adjustments which relate the total organism to the total object (cotention) and those specific tensional adjustments which relate a specific segment of the organism to the part-image expressed in the symbol of the object (attention). In brief, it has been our finding that the conflict is one between the physiological tensions and strains pertinent to the partitive or cerebral mode of attention in contrast to the tensions and strains that belong to the organism's attention as a primary and totally integrated function.

As this altered physiological approach gradually attains wider

[25] See note 16, page 58.

medical application, the physician, who has hitherto treated ideas with ideas, opinions with opinions, will regard the ideas or the symbolic interreactions of a patient as mere indicators of an underlying physiological disturbance within the patient's organism, and he will not seek to remedy these various arbitrary and unpredictable ideas and opinions as they exist socially within and about the patient. However valuable these outer manifestations may be as aids in locating the true condition, the physician will no more attempt to treat a mental disorder by correcting the symptoms expressed in the patient's feelings or ideas than a stomach specialist would attempt to treat a patient for a disorder of the stomach by correcting the outer symptoms or sensations associated with it. Like the stomach specialist, he will apply himself to the actual physiological organism of the patient, and in doing so he will discover that the real disorder is not the patient's ideas in regard to himself nor his reactions to other people's ideas in regard to him. He will discover that the neuromuscular modifications which attend the ideas the patient has in his head—in his socio-symbolic system—are incompatible with the neuromuscular modifications which motivate his organism as a whole; that the individual's partial, symbolic system of adaptation or behavior is in conflict with his organism's integral system of behavior. The physician will find that this conflict is not mental, inter-ideational or social, but that it is physiological. He will find that tensional alterations now symbolized as ideas and emotions have been artificially forced into the patient's cortical system and that these physiological alterations clash with and affront those organic tensions and modifications which pertain to the physiology of his organism as a total process.

As the result, however, of these observations in the sphere of phylopathology, we find the symptoms of a physiological disproportion of tensions not only in the outer manifestations of conduct represented in the deviate or psychoneurotic personality, but also in the socially conformable individual called normal.[26] For example, while less sharply demarcated than the reactions of the patient whom we have just considered, to the trained observer the patient's family presented, in a socialized form, outer manifesta-

[26] See note 7, page 52.

tions and symptoms which indicated an internal physiological discord that was substantially identical with the physiological discord disclosed in the internal processes of the patient himself. They too have their "ideas" or their esoteric image-references. They too, as is the case with the community generally, are constantly referring their subjective experiences and reactions to such extrinsic agencies as are represented in the symptomatic and quite arbitrary "good" or "bad" conduct of others. Like the patient, they assume the various dichotomous expressions of conduct occurring outside themselves or in others to be willfully motivated and to react as causal determinants upon their own behavior. Consider such a social reaction as, "He didn't return my greeting, and I don't like him," etc., etc. Consider, too, the arbitrarily projected basis of those partitively motivated affections and disaffections which mark the interrelated behavior of groups as it exists in human society generally. We have only to call to mind the constant political and international vacillations of feeling and action that are bred of such partitive image-references.

The completely dichotomous and contradictory motivation of the symbolic or miniature behavior-segment may be seen in the mental attitude that incites nations to war. Forgetful of the ruthless rapacity that has throughout history characterized their own missionary fervor when in quest of empire, the other "great nations" are at the moment pointing with effective irony at the pious zeal of the Italians in extending their empire across the Mediterranean in order to "Christianize" the Ethiopians. And at the spectacle of the Italian hosts devoutly bringing the Bride of the Lamb to a few colored people in armored tanks and bombing planes with which they explode them into bits or mash them into human pulp, it would seem that these other nations might well scoff at the intensity of the Italians' religious affectivity. But are the rest of the nations in any different case? Even a casual glance at their own reactions shows them to be no less motivated by the divisive feelings or affects that spring from the miniature behavior-segment of man's organism. The most superficial inquiry makes plain that these other nations, who in their righteousness are at the moment denouncing Italy for her wickedness and hypocrisy, do so only because in the mad scramble for broader

empire under the aegis of Jesus, Rome as of old has beat them to it!

The armies of Mussolini, as the armies of France, Germany, England, Russia and America, not excepting those of the lesser nations, are victims of a disorder affecting the organism of man as a race. And the nations of the world will deliver themselves of their real conflict only when man as a race shall turn about and confront this disorder within himself.

This finding, unless our phylopathological investigations have grossly misled us, is of deep sociological as well as of medical significance. It means that people who advocate any cause emotionally, partitively, whether in the sphere of religion, politics or educational reform, whether it is the advocacy of national armaments, international peace or what-not, are never for a moment motivated by the apparent issue in question. This is only the outer symptom, and the real issue which requires settlement lies within their own body-processes. The conflict is one in which certain localized cephalic tensions have in the process of man's evolution overtly gotten the upper hand of those tensions within the organism which alone afford it bionomic integrity and support. It is these tensions internal to man which call for objective recognition and adjustment, not the external issues with which we have become identified upon a purely subjective, partitive basis. But what is of significance to the student of mental behavior is that this universal misadventure in the behavior of man as a race affects no less the mental behavior of the student himself. This is the real problem confronting the student of psychiatry. That the student of psychiatry takes himself seriously is undoubtedly true and justly impressive, but taking oneself seriously is not enough. The "soap-box" orator can take himself seriously, and as a matter of fact often does. What is required of serious students to whom science, regardless of the temper of the times, is an accepted body of systematized facts, is that they take themselves *objectively*. In short, the sort of behavior that recites is very different from the behavior that behaves.

Because of prevailing short-sightedness toward the many ineptitudes in the individual's social adaptation, it is not at all realized how very small a percentage of disordered behavior-re-

actions ever reach the psychiatrist proper. It is true that cases which are regarded as "hopeless" and require commitment to an institution for the insane do come within his domain, as also the relatively few psychopathological conditions which have not yet attained the stage of closed and inaccessible systematization. But by far the greater number of behavior-disturbances exist socially and therefore unseen. These disturbances exist often, for example, in the patients one finds in the office of the throat specialist, the gynecologist, the general practitioner or even the dentist. It is such patients who make ready contact with the Christian Science healer, with the theosophist, the physical culturist, with the nudists, the chiropractors, the astrologers, fortune tellers and the like, not to mention the consultation rooms of the clergy, of teachers, journalists, social workers and others. Indeed, the clinical psychiatrist is the least favored of all, and accordingly sees but an infinitesimal proportion of the masses of people who move in and out of our midst with definite symptoms of "mental" disturbance.

It appears, then, that every one has his subjective "convictions" as well as the neurotic and, like the neurotic, without the slightest objective evidence on which to base them. And this inconsistency is found to apply to the most common of one's every-day contacts and interchange. Under the circumstances the question naturally arises, what must be the attitude of medicine toward the mental state of the normal individual—of the physician, of the psychiatrist, the criminologist, the psychologist, the educator and the reëducator—in short, what must be its attitude toward the state of mind expressive of the social community generally, when these communities are governed by the same symbolic motivations, by the same displaced affects or social images that govern the systems of the psychopathic individual? What must be the attitude of medicine toward the individuals who compose such communities when they can permit themselves to entertain the widespread illusion that internal conditions, of which we see only the outer symptoms in the form of disordered ideas, can be remedied or corrected through the application of still other ideas? And it must not be thought that this prevalent social symptom or illusion is restricted to the field of the professional psychologist, the

mental expert or the layman. Not by any means. The most objective medical men, the most practical physicists and biologists, when outside their own objective fields of inquiry, are seen to take exactly the same attitude. They are seen to take an attitude which from the background of phyloanalysis rests equally upon inter-tensional distortions within their own body-processes. These internal distortions are evidenced in the identical tendency within them toward the "interpretation" of the organism's conflict, whether represented socially or in an individual patient, in the form of mere outer symptoms—in the form of apparent affects and ideas.

The evidence of laboratory observation, therefore, forces the conclusion that, in this interrelational disturbance of function due to localized tensions occurring in the cephalic segment of man, we are dealing as truly with biological conditions, with disordered structural areas, as those which occupy the physician in the domain of structural medicine when dealing with a disorder of a part or organ that disturbs the system's total function. It is in view of this physiological disturbance in the tensional interrelations of the organism as a whole, and of related structural findings, that we must question psychiatry's general position toward the outer symptoms of man's behavior-impairments as being inconsistent with scientific procedure and therefore no longer tenable. We must abandon the view that ideas are competent to remedy so-called mental disorders, or that what are called mental measures of repair are applicable to what are called mental diseases.

I realize that what I am trying to say in behalf of a broader biological conception of mental and nervous disorders—what I am in my way trying to do in my efforts to give meaning to these processes—is no more than others have also tried in their way to accomplish. In saying this, I think of the many psychologists, psychiatrists and sociologists who have through the years attempted consistently to put into terms of actuality a sense of man's physiological solidarity, individual and social. So that if I unhesitatingly disavow the current psychic, ideational method of psychiatry, professional and lay, yet when I recall the thoughtful position of many investigators in this field, I would not be

thought so far forgetful of my obligations to them as to disavow the broad biological conceptions to which my own investigations so largely owe their incentive.[27] Nevertheless, from the basis of experimental studies in physiological reactions affecting the behavior of the organism of man as a species—studies covering many years in and with groups composed of normal and neurotic subjects—there is unequivocal evidence that the material which habitually occupies the interest of psychiatry is not the material that constitutes primarily the patient's disorder.

On the contrary—as I have said and as I shall repeat from many different angles—it is found that projective ideas and emotions are but symptoms of disordered physiological processes existing inter-individually among us and that these disordered physiological processes, of which only the symptoms are manifested in abnormal ideas and images, are utterly inaccessible to remedial ideas and suggestions or to any other form of mental education —persuasive or analytic—directed toward their alleviation. Laboratory experimentation with the social processes of man makes evident that our psychiatric, our psychological, in short, our normal mental measures of repair, as they are now universally practiced, are without scientific basis for meeting the problem existing in those pathological distortions of which we see only the outward signs and symptoms now characterized as "mental" disease. The condition of the organism as a whole that is marked by a disparity in the state of tension or alteration in the cephalic segment and its adjacent structures, in contrast to the state of tension existing throughout the body as a unit, can be remedied only as such tensions are permitted to reëstablish their functional interrelationship with that of the total phyletic organism.

Of course, one may, through recourse to psychotherapy, disguise such disorders by palliating the symptom or pain that gives indication of the underlying condition, just as one may disguise a disorder of the stomach with drugs which temporarily remove the pain that offers the chief clue to the real disorder. But mental measures have only the efficacy of the opiate. Whether tempo-

[27] It is particularly in Dr. Adolf Meyer's conception of those factors which contribute to the integration of the individual organism as a whole that my own trend finds its closest theoretical parallel. It is to this conception, therefore, that my special acknowledgment is due.

rarily or permanently, they relieve the individual's distress with comforts which only socialize or dissipate within the community the external symptoms of the organic disorder lying beneath them.

In this connection I would like to call attention to a circumstance that is quite consistent with the social import of the present thesis. We have seen that there may occur functional modifications in the interconnection between the forebrain and the midbrain, according as the prevailing attentional adjustment pertains to the partitive or to the total attentional system. This is really not extraordinary when we consider the analogous effect of alcohol and other drugs in dissociating the function of the "higher" brain from the "lower" and the consequent changes in the "inner self" observable in the individual's markedly altered social and environmental adaptation. But the circumstance to which I would call attention is one that is very generally overlooked. It is the circumstance that the measures for the relief of mental and emotional disorders which are instinctively recognized by civilized society—if we may judge from the extent of their application—are, after all, physiological measures. For of all the recourses for the alleviation of mental pain and disquiet, of irritability, of anxiety states, of depression and nervous insecurity, in short, of all the measures employed to relieve the discomfort of the diseases called mental or nervous, the most generally applicable throughout civilized communities are alcohol and allied hypnotics. This situation leads us to ask what, if any, is the relationship between the wide-spread use of alcohol as a social palliative for mental and emotional disorders and the incidence of inter-tensional discord and conflict—an inter-tensional conflict between those neuromuscular systems of the organism presided over on the one hand by the phylogenetically older midbrain and on the other by the specialized cortical areas of more recent development. In other words, what is the relationship between the socially prevalent phenomenon of alcoholism or drug addiction and the internal tensional conflict existing between the systemic and the partitive modes of man's bionomic adaptation? Whatever may ultimately prove to be the correlative significance neurologically of these two parallel social phenomena—the wide-spread prevalence of neurosis and the equally wide-spread and compulsive use of alcohol

throughout the community at large—it would seem significant that by the test of actual usage the instinct of man thus strongly asserts the physiological nature of nervous and mental disorders through recourse to physiological measures for their relief.

It is quite true that in the community's desperation it resorts to the use of alcohol and kindred drugs quite unintelligently. Alcohol and allied depressants as agents in the treatment of nervous irritability and conflict are, of course, as ineffective medicinally as morphine is ineffective as a remedy for tuberculosis or carcinoma. But the significant fact remains that in the community's quest for relief from emotional disturbances, such physiological remedies as alcohol and kindred drugs have been given a far more general and spontaneous application than all the measures which mental expedients or external ideas (psychology, psychiatry, philosophy, faith healing etc.) have offered man from time immemorial. This circumstance is medically and biologically significant.

The control and legitimate use of alcohol which in many countries has risen to the prominence of a national programme is not a moral or a legislative issue. It is a medical one. It is an issue that is definitely bound up with the failure of psychopathology to recognize the physiological nature of mental and emotional disturbances and with its consequent failure to approach these disturbances with physiological measures of repair. The question is not one of prohibition or license. It is not a question of the rightness or the wrongness of the use of alcohol, or of its abuse. The outward expression to be seen in the abuse of alcohol is just another "mental" symptom. As this symptom, however, presents a medical problem, the medical profession cannot be absolved from its medical responsibility toward it. It cannot be absolved any more than the physician can be absolved from the responsibility of recognizing that nervous disorders and insanity are a physiological, a medical problem, and that these disorders cannot be left, as they are to-day, to a mental and emotional interpretation on the part of a normal or lay community.

Where there is impairment of health or wholeness in the structures composing the sum of the body-functions, the individual is necessarily rendered an economic burden upon the social com-

munity. In reasserting the total function of the organism as a healthy unit, the individual becomes automatically a coöperative constructive social factor. In the same way, where an organism is blocked in the harmonious inter-functioning of its cerebral reactions and its total body-processes, the individual becomes socially and industrially a community liability.[28] And as among the disorders of the body there are processes which are known as infective and which are a social menace because of their tendency to spread disease throughout the community, so there are inter-tensional disturbances of function within the total organism of the individual and the phylum, and these disturbances if not recognized as equally objective conditions and treated with equally objective measures of repair, perpetuate disfunction and discord throughout the processes of man as a race.[29]

An inclusive laboratory study of subjective man and of his reaction as a total process gives indication that the false ideas the delusions and phobias, the mood-alternations of elation and depression, the emotional conflicts, the repressions and over-accentuations characteristic of mental disease—all are but reflections of an impairment that is deeper-seated within the organism and that is present in so-called normal as well as in obviously pathological individuals. This impairment consists in tensions, alterations and disturbances which affect definite body processes. To repeat, the conflict or disparity present in mental disorders consists in a discrepancy between those feelings and sensations which belong to the organism as a whole and those sensations which belong to that circumscribed segment of the organism located in the cephalic region with its secondarily acquired ideas and images. As this conflict consists in a disparity between two clearly defined body-zones, it is a physiological conflict. Such a physiological conflict is remediable only through recourse to physiological methods of repair and not through a programme which attempts to exchange ideas for ideas and images for images.

[28] Tilney, Frederick, and Kubie, Lawrence S., "Behavior in its Relation to the Development of the Brain," *Bulletin of the Neurological Institute of New York* 1931, Vol. I, pp. 229–313.

[29] Burrow, Trigant, "Insanity a Social Problem," *The American Journal of Sociology,* 1926, Vol. XXXII, pp. 80–87.

CHAPTER VI

NEUROPATHOLOGY AND THE INTERNAL ENVIRONMENT [1]

MEDICINE, like other sciences, had its beginning in the metaphor, the symbol, the allegory. Astronomy was first symbolized in the teachings of astrology. Modern chemistry was presaged in the figurative doctrines of the alchemists, and in man's early theological formulations there is found the original allegorical treatment of the humanitarian sciences. As science developed, this tendency to the use of metonymy and the symbol came more and more to smack of phantasy and charlatanism, until gradually rhetorical usage gave way to concepts based upon more substantial structural denominators. Thus it may be said that science has been a record of man's progress from preceptive symbol and allegory to demonstrable structures and functions as exemplified in the objective findings of the laboratory.

The present work, based upon laboratory observations, is an attempt to relinquish prevailing figurative, symbolic or psychic interpretations of behavior-phenomena and to study the structure and function of man's organism in its immediate relation to the environment. In this bionomic study of man it will be my effort to regard the behavior of the organism in respect to the environment from the same ecological basis from which we would study the behavior of the amphioxus or paramecium in relation to its habitat. In studying the behavior of these lower organisms, however, a circumstance which we commonly overlook is that we necessarily study them only from the outside. We acquaint ourselves with their structure and function only through the data we gather or through the impressions we form of them by

[1] Paper originally published in briefer form in *Human Biology*, 1935, Vol. 7.

means of the external senses. We gain no first-hand, inside knowledge of these remote forms of life through our own empathic or proprioceptive experience. How it feels to be a paramecium, or even an organism of much closer kin to us, we have long ago forgotten, and we can therefore approach such organisms now only through the medium of our outer, projective senses. It is true that there are likewise in man structures and functions which may be observed and recorded only through the avenues of the special senses, but there are also within the organism of man certain behavior-processes which are quite inaccessible to the exteroceptive system or to the projective senses. We may become acquainted with these behavior-reactions only as we ourselves are the inside proprietors of such processes—only as we ourselves embody in our own organisms the living repository of sensations and impulses that make up the internal environment of man.

In attempting to orient ourselves in regard to what is for us an entirely new field of investigation—the field of man's biophysical relations—it would seem simpler first to consider the sphere of man's ecology as it is effected through the external senses or through the medium of the idea. This field of the idea, of the symbol or mental image, is of primary importance to the neurologist and the psychopathologist because of the many impediments in man's adaptation which are secondarily associated with images or ideas as they mediate between the organism and the outlying world by means of the special external senses.

Medicine has long recognized the wide domain of disorders described as impairments in the sphere of the idea or the image—the sphere of what are called mental disorders.[2] It has long recognized the conflicts and discrepancies, the educational immaturities and the retardations of development in the life of man,

[2] How wide a domain this is may be judged by figures presented by the Council on Medical Education and Hospitals of the American Medical Association. According to their report published in *The Journal of the American Medical Association* for March 25, 1933, "The largest number of special hospitals consists of those for nervous and mental patients. . . . In capacity and patient population they represent nearly 50 per cent of the total." And a corresponding report in the issue of March 7, 1936, shows that "The rate of increase in capacity and increase in patient population in the general hospitals has been exceeded by the mental hospitals."

that centre around his thoughts and his ideas.[3] I should like, therefore, in this chapter first to direct our inquiry to the sphere of adaptation that has to do with the image or idea because of the relation between distortions occurring in this sphere and the wide domain of mental disorders as now envisioned by psychiatry.[4]

In the year 1895 Freud drew the attention of the medical world to a phenomenon which he had observed in his study of mentally disturbed patients—a phenomenon which up to that time had remained unnoted.[5] He drew attention to the connection in these patients between certain ideas, images or symbols entertained by them and the coincident emotion or affect that invariably accompanied them. While from the view-point of biology Freud did not lay the central stress upon this phenomenon that its importance merits and thus missed the far-sweeping significance of this psycho-empathic linkage, the apparent amalgamation between symbol and affect observable in psychic disturbances became the pivotal point in the therapeutic system of psychoanalysis as applicable to the individual. Freud did not, of course, regard this linkage as pathological in itself. This was not at all the problem for Freud. For him the problem consisted in the circumstance that this linkage obviously interfered with the adaptation of certain individuals whom we call neurotic and he, therefore, undertook to shift or modulate this linkage. Freud did not

[3] The department of behavior which Franz Alexander has aptly termed the individual's "foreign politics" is synonymous with this sphere of the image or idea. ("Functional Disturbances of Psychogenic Nature," *The Journal of the American Medical Association,* 1933, Vol. 100, pp. 469–473.)

[4] A paper by Bertram D. Lewin, M. D., "The Body as Phallus" (*The Psychoanalytic Quarterly,* 1932, Vol. II, pp. 24–47), describes the very acme of symbolic distortion as evidenced in the neurotic's recourse to metaphor and allegory. It shows also the thorough systematization of principles elaborated by psychiatry in its efforts to keep pace with the infinite diversions of figure, symbol and metaphor characteristic of neurotic disorders. Freud is, of course, outstanding in his interpretation of the symbolic symptomatology of these manifestations. But the painstaking and able writings of other students in the field of psychiatry show also the many varied ramifications and concatenations characteristic of these projicient processes. In this country alone one has only to cite the valuable formulations of such thoughtful investigators as Meyer, White, Paton, Campbell, Brill, Wertham, Schilder, Jelliffe, Sullivan, Clark, Diethelm, Williams and a host of others, to indicate how fully the field of man's subjective projections has been studied and described.

[5] Freud, Sigmund, *Selected Papers on Hysteria and other Psychoneuroses,* translated by A. A. Brill, New York, The Journal of Nervous and Mental Disease Publishing Co., 1912.

at all concern himself with the linkage as a falsely motivating influence in human behavior nor see that from a biological viewpoint it marks a social process that is throughout inadvertent and unhealthy. He did not see that this linkage between affect and symbol is as answerable for deviate processes existing in social communities commonly regarded as healthy as it is for processes of the manifestly psychopathic personality. However, it was this discovery of Freud's in the sphere of adaptation having to do with the image or idea as manifested in the neurotic patient through which psychiatry secured for the first time an entering wedge to an understanding of the outer symptomatology of neurotic disorders and of insanity.[6]

As we know, Freud recognized also in this association between symbol and affect a purposive and insistent quality. He found that these two elements adhered to one another with a consistency which gave indication of a definite intentional import. But in this purposive or teleological import we still see indications reminiscent of metaphysics and of magic. As the reader will doubtless recall, the element of import and intention in neurotic processes was originally ascribed to some allegorical agent existing outside the patient. Hysteria and kindred disorders were interpreted as visitations from heaven in retaliation for the willful transgressions of the unfortunate individual. To-day allegorical causation and symbol have been shifted by psychiatry to the patient himself, so that the causal or moral agent in the production of his disorder is, in the interpretation of psychiatry, now traceable to the patient's own psychic or symbolic processes. It was this trend inseparable from Freud's discovery of an underlying connection between a patient's imaginal and his emotional components which led to the characterization of his teaching as the *dynamic* interpretation of the neuroses and of his system as that of dynamic psychology.[7] For Freud soon saw that this affiliation

[6] The association between idea and affect is in fact the basis of the reaction Freud first noted as the "transference"; the coterminousness of these two elements underlies also the significance of the "social image" as first isolated in our early group studies. See note 6, page 28, and note 15, page 56.

[7] MacCurdy, John T., *Problems in Dynamic Psychology,* New York, The Macmillan Co., 1922.

McDougall, William, *Outline of Abnormal Psychology,* New York, Charles Scribner's Sons, 1926, pp. 1–29.

between the image and the affect embodied the entire desire-life of the neurotic patient, and because of this dynamic association between image and affect he gave to this phenomenon the name of *wish-fulfillment.*[8]

All this is so commonplace now in the history of psychoanalysis as to have become legendary.[9] But it is important to recall this quite general emphasis upon the image or idea with its accompanying affect because of its connection historically with the biophysical experiment into which I should now like to enter in fuller detail—an experiment that was conducted by my associates and myself and that directed itself to the study of man in his immediate behavior-reactions.[10] Setting out from the phenomenon of the invariable association in neurotic patients between the affect and the idea, our group or total-reaction experiment originally concerned itself with the logical extension socially of this early discovery of Freud's. In its later development our investigation occupied itself with those bionomic processes which reflect the biology of man's organism in its internal, proprioceptive function.

The early phase of this experiment brought out several interesting observations.[11] Outstanding among them was the observation that this dynamic connection between the affect and the image, noted by Freud in the unconscious processes of the psychoneurotic patient, is equally present and equally pathological in the processes of normal individuals. The persistent

[8] See note 1, page 68.

[9] *Psycho-Analysis Today,* edited by Sandor Lorand, New York, Covici-Friede, 1933.

[10] See note 11, page 53.

[11] The preliminary findings in the group or total-reaction experiment have been fully reported in various papers by the author:

"The Laboratory Method in Psychoanalysis," *The American Journal of Psychiatry,* 1926, Vol. V. pp. 345–355.

"The Reabsorbed Affect and Its Elimination," *The British Journal of Medical Psychology,* 1926, Vol. VI, pp. 211–218.

"The Autonomy of the 'I' from the Standpoint of Group Analysis," *Psyche* (London), 1928, pp. 35–50.

"The Basis of Group-Analysis, or the Analysis of the Reactions of Normal and Neurotic Individuals," *The British Journal of Medical Psychology,* 1928, Vol. VIII, pp. 196–206.

See also: Syz, Hans, "On a Social Approach to Neurotic Conditions," *The Journal of Nervous and Mental Disease,* 1927, Vol. 66, pp. 601–615 and "Socio-Individual Principles in Psychopathology," *The British Journal of Medical Psychology,* 1931, Vol. X, pp. 329–343.

and obsessive presence of this dynamic couplet, namely, the idea and its inseparable consort, the affect, was found everywhere and at all times throughout the community life. It was found to be present not only under special or abnormal circumstances, but to be present and operative under conditions of ordinary social intercourse. Because of the universality of this attachment between the idea and the affect, it became apparent that, in dealing with this phenomenon which Freud interpreted as a special impediment in the behavior of the neurotic patient, we were dealing not with a sporadic clinical symptom but with a condition indigenous to man as a phylum. It became evident that in normal communities of man individuals are constantly liable to disorders of adaptation due to this unrecognized cohesion between affect and idea. For such psycho-empathic cohesions may show a sudden exacerbation at any moment. This means that presumably normal individuals are at all times subject to the incidence of mental disease. It means that among normal communities there may occur at any time a sudden flare-up of emotional stresses which can be traced to this wayward and unpredictable interconnection between the individual's affect and his mental image or idea. It is hardly necessary to mention that among the predisposing incidents in such a sudden flare-up are a patient's lowered physical resistance, the presence of some constitutional weakness or accidental infection, the intrusion of conditions of unusual economic stress, and kindred factors.

Another and equally arresting observation regarding this unconscious linking of the idea and the affect was its completely impregnable position. All recourse to ordinary mental procedures proved utterly incompetent to cope with this securely intrenched "association" between the affect and the idea. As far as this essential juxtaposition between image and affect was concerned, repeated experiment showed this ancient and venerable alliance to be completely inaccessible to every conceivable avenue of external approach. It was, of course, not difficult to cause the affect to shift from one idea to another or to distribute itself socially among several ideas, just as in the treatment of the neurotic patient through the method of psychoanalysis or other psychotherapeutic techniques it is not difficult to shift an affect from one idea or

cluster of ideas to others and thus to give to it a social distribution that may, from a clinical view-point, render it temporarily quite harmless. But this is a commonplace. In our all too adroit dealing with children every one of us has recourse to such handy expedients. We all know instinctively how easy it is to dissipate an affect-crisis by "diverting a child's interest," as we say. In the clinical field the outstanding instance of this shift of affect may be seen in the "transference" of a patient's affect-notions from his parent to the "personality" of the physician. It is also seen in its broader fluctuations in the spontaneous alternation of mood from elation to depression that characterizes manic-depressive insanity. In its wider social expressions it is seen in those broad waves of affect which periodically sweep over nations and disclose themselves in the feeling-alternations of peace and war. It is one thing, however, to shift the affect from one idea to another, and it is quite another thing to divorce completely the *sphere* of the affect from the *sphere* of the idea, as is demanded in the broader organismic view-point of phylobiology. Indeed, closer examination discloses that when it comes to the matter of entirely divorcing the sphere of the affect from the sphere of the idea, the customary psychiatric approach is wholly ineffectual.

With this brief review we may leave the sphere of inquiry that has to do with the idea or the image. We may dismiss all consideration of those factors which bear upon the sphere of mental and nervous disorders as these maladjustments are reflected in the outer symptomatology of the affect and the idea. For now, as we continued the group or total-reaction experiment with a view to discovering some means of dissolving this rigid pact between the idea and the affect, it became evident that what appeared to constitute the seat of the trouble—this adhesion between affect and idea about which there has always been so much ado—was not the actual disorder at all. It was found that, despite prevailing figurative, symbolic or psychic interpretations, the real difficulty had nothing whatsoever to do with processes that are observable by means of the special projective senses. Coincidently it became evident that the real conflict lay in the organism's internal, proprioceptive processes; that alterations involving conflict within the internal body-processes were answerable for the

difficulties and embarrassments which until now we had been ascribing to the sphere of the idea or the image. This complete shift of the field of inquiry from the sphere that has to do with the symbol or idea to the sphere that has to do with internally perceptible neuromuscular processes introduced the scientific basis of investigation represented in phylobiology. It marked the adoption of principles based upon the observation of proprioceptive material and its bio-physical relation to man's total adaptation as a phylum.

It is, I think, accepted by most of us to-day that the process of attention or of interest consists of an internal adjustment of the organism to the external environment, and that this adjustment to outer environment is dependent upon certain definite motor patterns of alteration within the organism's neuromuscular system.[12] In the present discussion I should like to give special consideration to the domain of these internally appreciable alterations in the neuromuscular system concomitant to the organism's attentional set or focus as it relates the organism to the outer environment.[13] For these neuromuscular alterations which are the physiological concomitants to the process of attention have, in our total-reaction experiments, entirely replaced all consideration of the process of man's attention or adaptation from the standpoint of the mentally projected idea or image. These motor con-

[12] Among the outstanding advocates of the motor basis of attention may be mentioned Darwin, Bell, Alexander Bain, William James, Théodule Ribot and Hugo Münsterberg. In Ribot's *Psychologie de l'Attention* (Paris, Félix Alcan, 1889, p. 32) there occurs this passage: "Les mouvements de la face, du corps, des membres, et les modifications respiratoires qui accompagnent l'attention sont-ils simplement, comme on l'admet d'ordinaire, des effets, des signes? Sont-ils, au contraire, *les conditions nécessaires, les éléments constitutifs, les facteurs indispensables de l'attention?* Nous admettons cette seconde thèse, sans hésiter. Si l'on supprimait totalement les mouvements, on supprimerait totalement l'attention." An excellent summary of this trend has been given by Professor Herbert S. Langfeld in his article, "The Historical Development of Response Psychology," *Science,* 1933, Vol. 77, pp. 243–250.

For more recent evidence of the concomitance between attentional processes and neuromuscular changes the reader is referred to the experimental studies of Edmund Jacobson: "Electrophysiology of Mental Activities," *The American Journal of Psychology,* 1932, Vol. XLIV, pp. 677–694.

See also the important experimental work of Schultz, J. H.: *Das autogene Training,* Leipzig, Georg Thieme Verlag. 1932.

[13] Burrow, Trigant, "The Determination of the Position of a Momentary Impression in the Temporal Course of a Moving Visual Impression" (Doctoral Thesis), *The Johns Hopkins Studies in Philosophy and Psychology, No. 3, Psychological Monographs,* 1909, Vol. XI, pp. 1–63.

comitants, then, in so far as they are internally appreciable, are the sole materials of investigation in the present work. It will however, greatly assist our understanding of just what happened in the course of our investigations as they concern this shift from the customary sphere of the idea or image to the sphere of the organism's internal processes, if we will consider briefly the morphological structures whose functional alterations constitute the material under investigation. In order to do this it will be necessary to review for a moment certain early biological foundations that bear upon the general ecology of man as a living organism.[14]

It should be stated that in the present thesis there is the further reiteration of my effort to extend the conception of neuro-morphological processes to include their growth from a unitary phyletic stem. In pursuance of this aim it has seemed entirely appropriate to employ the same terminology that is now habitually used in the study of the more static or restricted morphological process.[15] Whether we are dealing with the neural organization of the individual man or with the neural organization of the genus man, the structures under consideration are still neural, and the basis from which these structures are studied is still morphological, notwithstanding that the change in function which the morphological alteration involves covers a period of man's development that extends over many thousands of generations.[16]

As we know, man's bionomic relation to the world of objects around him is effected through the various superficial sense-organs occupying the periphery of his organism. It is through the medium of the periphery with its external senses that the organism is related to the external world of phenomena. The peripheral senses which in man have come to be especially employed in mediating between his organism and the external world are the special exteroceptive senses located in the head, chiefly the visual and auditory senses. But in the course of man's evolu-

[14] Burrow, Trigant, "Biological Foundations and Mental Methods," *The British Journal of Medical Psychology,* 1928, Vol. VIII, pp. 49–63.

[15] See note 16, page 58 and note 2, page 46.

[16] Cf. Wheeler, W. Morton, *Emergent Evolution,* Psyche Miniatures, London, Kegan Paul, Trench, Trubner & Co.

tion, as I have already indicated, something very special happened in the domain of these cephalic senses. By virtue of a particular function these special sense-organs located in the cephalic segment acquired secondarily a reciprocal action in their relation to one another and in their relation jointly to the muscles of phonation—chiefly those of the tongue, lips and larynx—which differentiated them sharply from their function in relation to the organism as a whole.[17] This circumscribed, partitive function, is analogous to the process which, in a different connection, has been described by Coghill as a partial reaction-pattern.[18]

This restricted pattern of reaction associated with a special function of the external senses located in the head will be given very particular emphasis in the present study. I shall try to show that the function of this area has become quite demarcated from the general peripheral function that determines man's total attentional adaptation in relation to the external environment. For through their coördination with the organs of speech these special external senses, in relating man's organism to the outer world, do not now function so much as integral constituents of the total periphery, but they function rather through their special and circumscribed mechanism of projection. This projicient process, represented in the special neuro-semiotic or picture-forming mechanism of man, is the exclusive function of the exteroceptive segment as it operates in the production of the image, the symbol or the idea, and it is this exteroceptive segment that constitutes the physiological substrate of that particular mode of attention which has to do with mental concepts or with the language of man and his ideas. This medium of connection existing between the organism and the external environment through the symbol or idea covers an enormously wide domain of man's experience. The sphere of attention or adaptation that is restricted to the special exteroceptive or projective senses through their formation of the image or idea has practically preëmpted for civilized man to-day the entire field of the organism's bionomic interconnections with the external world of actuality.[19]

[17] See note 10, page 114.
[18] See note 12, page 117.
[19] Cf. page 117.

Prior to the development of language, however, or prior to the introduction of the type of attention that mediates contact between the organism and the environment through the "invention" of the symbol or idea, there existed, as I have said, in man as in other animals, a type of attention or adaptation through which the organism reacted directly and as a whole to the external environment about it. That is, the original process of attention—the process I have referred to as *cotention*—functioned as a total reaction-pattern and related the organism to the environment as a total pattern of response. This total response was accomplished through the mediatory action of the periphery in its total homogeneous function. For there had not yet developed within the species the differentiation between the total periphery and the partitive or symbolic system with its restricted cerebral type of attention. While the total response was contributed to also by the visual and auditory senses, the function specific to these special senses was originally performed always in coördination with the periphery in its total intermediary function.

With reference to the periphery let me recall that from the lowest unicellular organism with its inner protoplasmic contents and its delimiting cell membrane, to the highest differentiation of structure observable in the primates, there is throughout the evolutionary series an unbroken line or lamina of demarcation between the organism's internal and its external environment. It is precisely this phyletic lamina that constitutes the organism's periphery.[20] In the implications of the present thesis it should not be overlooked that the function of the periphery in man, as in other organisms, is primarily that of mediating between the organism's internal and its external environment. The periphery, therefore, with its external senses possesses not only the function of establishing contact with the external environment, but it possesses also the function through which it makes internal contact with the internal environment. In short, the organism's periphery represents a general go-between through which there is established contact and communication phylogenetically be-

[20] I hope I do not appear to entertain the idea that in the more highly organized forms of life there exists anatomically any such sharp delimitation between periphery and internal organization as may be made out in unicellular organisms between the cell membrane and its inner protoplasmic contents.

tween the total internal environment of man and the total external environment lying outside of his organism.

By the internal environment I mean the domain which includes the highly sensitive, mobile structures enclosed within the body's outer layer or periphery and which constitutes the vascular, visceral, glandular and involuntary muscular systems with their intricate ramification of tissues supplied from the sympathetic or autonomic nervous system.[21] When I speak of the periphery, however, it is extremely important that I make clear the morphological significance of this sphere as it mediates man's general bionomic adaptation. The periphery, as the term is here used, refers to those external body-structures through which the organism reacts to the surrounding environment. In this sense the periphery includes not only the dermal and epidermal structures with their tactile and other special sense-organs, but it includes also those external skeletal muscles through whose kinesthetic function the organism establishes its relation spatially to the surrounding environment. The periphery, then, as here defined, includes also that portion of the total organism which, in general, is controlled by the voluntary muscles and innervated by the cerebrospinal nervous system.

When we come to take a comprehensive view of man's bionomic position in the universe—when we come to view broadly the field of man's mental and social interrelationships, and especially when we consider those processes which are marked by difficulty and impairment as we see them in their outer manifestations in mental disorders—we shall find that we have as yet been occupied with this ecological relation in respect only to the part-function of the periphery I described a moment ago as the projective function of the exteroceptive segment. We shall find that we have been occupied with this part-function of the periphery only as it con-

[21] This domain is closely related in its function as a whole to the "milieu intérieur" described by Claude Bernard, Haldane and Cannon; it has been given very special study by Kempf and others.

Bernard, Claude, *Leçons sur les Phénomènes de la Vie Commune aux Animaux et aux Végétaux,* Paris, J.-B. Ballière et Fils, 1885.

Haldane, J. S., *Respiration,* New Haven, Yale University Press, 1927.

Cannon, Walter B., *The Wisdom of the Body,* New York, W. W. Norton & Co., 1932.

Kempf, Edward J., *The Autonomic Functions and the Personality,* Nervous and Mental Disease Monograph Series, No. 28, 1918.

cerns the sphere of attention or adaptation that has to do with the image or idea. For upon investigating the organism's adaptation as a whole, there is evidence that through an inadvertence in man's bionomic development the organism now attempts to adjust its behavior entirely through this medium of the idea; that, due to man's more recent cortical development, the social reaction of the organism to the external environment has come to be negotiated solely through this projective part-function of the exteroceptive segment. In brief, we have been occupied only with that part or function of man's periphery which relates him to the external environment through the symbol-forming system of reactions located in the head, and accordingly we have attempted to cope with the invalidations and impairments in man's adaptation only upon this wholly specialized projective basis of man's relation to the universe.[22]

There is strong internal evidence that man's prevailing adaptation to the external environment and to others of his own species, as it is mediated through the image or idea now projected by him, has been at the expense of the general kinesthetic function associated with the peripheral neuromuscular system as it orients the total organism's relation to the external world. When we come to consider the problem of nervous disorders and insanity from a phyletic basis of inquiry, it appears that this restriction in man's general bionomic adjustment is primarily answerable for the widespread evidences of illusion and unreality as they exist in the individual and in society. For, in the bionomic adaptation of the total organism, the periphery, as I have said, includes both the special senses of the head and the entire skeletal musculature underlying the general body-surface. But it does more than this. It includes also the kinesthetic correlation that unites these two areas into a functioning whole. On the one hand there is the general body-musculature and on the other there is the specific musculature of the visual, auditory and laryngeal organs which, in their neuromuscular inter-functioning, combine to form man's specialized symbolic system of intercommunication by means of

[22] "Psychotherapy is the treatment of diseases by psychic means, that is to say, by persuasion, emotion, suggestion, distraction, faith, preaching, in a word by thought." Grasset, Joseph, "La Psychothérapie," *Revue des Deux Mondes,* 1905, Vol. 5, p. 351.

the projective mechanism. The organism's general neuromuscular function is broad and mute but fundamental and primary; the neuromuscular function of the projective senses is secondary but acute, incisive, pointed, highly specialized and articulate. That is, the function of the periphery, as intermediary between the total internal environment and the total external environment, represents a biologically inseparable correlation between the total periphery and that specialized segment of the periphery which relates the organism to the external world through the projective, symbol-forming mechanism located in the head.

From investigations of total-reaction processes it would seem that, in the field of man's symbolic attention or in his projicient adaptation, the organism has inadvertently substituted a preponderantly partial reaction-system in place of the organism's total pattern of response. It would seem that, due to this generic maladaptation within man himself, he has failed as yet to acquire an aptitude for sensing processes which are connected with a mode of adaptation that is internal to his organism as a whole. He has failed to reckon with the directive adaptation and control of processes which are within him but which at the same time are not approachable through the usual avenues of the external senses and the idea. These are the processes to which I alluded in the beginning of this chapter as belonging to the internal proprioceptive function of the organism.

To return to a consideration of the altered direction of inquiry necessitated by the group or total-reaction experiment, I was speaking of the complete impasse we found ourselves faced with in our efforts to separate the idea and its invariable attendant, the affect. I said that the seat of the trouble did not, after all, lie within the mental or projective sphere. I also alluded to the fact that the field of our inquiry had, in consequence, shifted from the sphere of the idea to the sphere of the organism's internal proprioceptive processes. I then recalled the early biological significance of the periphery in its bearing upon man's general ecology.

Following this brief review of the function of the periphery as intermediary between the internal and external environments,

we are now better prepared to consider the process of attention in the light of the general neural and muscular alterations which are its motor concomitants. We are better prepared to consider those internal modifications which are ordinarily neglected in our customary preoccupation with the outward manifestation of the idea and its adherent affect. In the altered trend which the inquiry now took, the direction of our interest wholly disregarded the idea and its affect. Instead of our interest or attention being directed outward from the periphery to the object as perceived through the medium of the image or idea, the course of the investigation became automatically reversed. The attention was now no longer projected by the symbol-forming mechanism from the periphery outward to the sphere in which the image or idea is operable in its purely projective intention or meaning. The attention was now directed inward upon the organism with its generally distributed body-tensions, both internal and peripheral, but specifically upon that part or detail of the periphery that constitutes the cephalic or exteroceptive segment.

We are now speaking, therefore, of the process of attention or adaptation as internally appreciable in those motor alterations which are concomitant to the process of attention in its outer manifestations—manifestations which may be partitively projected in the form of the symbol or idea, or which may be expressed in the organism's total response to the outer environment. But whether total or partitive we have to do here only with reactions that are definitely perceptible within the organism as neuromuscular patterns of response. It is extremely important to note the emphasis here upon the function of attention as an internal neural process in contrast to the habitual emphasis upon the outer concept or image.

The physiological configuration corresponding to the partitive, specialized, projective pattern of attention, with its specifically congested tension and stress in the region of the brow and eyes, was from now on sharply differentiated from the configuration involved in the integral, empathic pattern of attention with its harmonious distribution of tensions throughout the organism as a whole. This distinction between the general neuromuscular pattern of attention and the partial, restricted pattern underlying the

organism's projective reaction—its symbolic or neuro-semiotic behavior—is basic in the present thesis. For with the organism's concentration upon this physiological pattern localized in the exteroceptive system, the tensions and alterations belonging to the two physiologically appreciable types of attention—the total interoceptive and the symbolic exteroceptive—became clearly demarcated within the body-structures.

Instead of the attention now centring upon the projected idea and its adherent affect, the entire attentional focus of the organism was shifted. This meant that a pattern of attention was called into play which was wholly different from the attentional pattern that connects a part-function of the periphery with the external environment through the symbol or idea. The specific motor alterations which are the accompaniment of the process of attention having to do with the projected image or idea—motor alterations which are definitely perceptible in neuromuscular tensions and strains associated with the projective, exteroceptive segment—were now replaced by neuromuscular tensions and alterations which involved the organism's general interoceptive and proprioceptive processes. Because of this physiological discrimination in attentional patterns, because of the altered focus of attention and its concomitantly altered physiological pattern within the organism, there was a two-fold result. We have already seen that through the partitive mechanism of projection our ideas have become secondarily linked with mere symbolic affects. But it became possible from now forward for the projective segment to report its object quite mechanically, even where this entailed intimate human relationships, without in the least involving the sensations or feelings which belong to the vegetative or autonomic responses of the internal environment. Further, coincident with this separation of the projective, partitive, exteroceptive system from the empathic, autonomic, interoceptive system, the affect-tensions which had hitherto been obtruded into the cephalic segment now became reabsorbed in sensations and feelings that belong to the organism as a whole. Accordingly, the conflict produced through the projection of the organism's feeling into the sphere of the idea automatically disappeared. There was now no longer the affect adhering to the idea.

As a concrete illustration of such a shift of tension let us take the frequent experience in which one projects his feelings outward toward some one else, and accordingly "sees" some one as meritorious or reprehensible. The affect might be sentimental approbation, suspicion or what-not. Let us say the projection has to do with some latent residuum of irritation. Now if the individual succeeds in his recourse to a more internal concentration, he immediately shuts out entirely all affect-preoccupation with the offending person or event. Automatically his attention or concentration, being denied its habitual outlet in these affect-preoccupations, now becomes focused within himself and centres specifically upon local tensions in the region of the head which hitherto had been unobserved. These tensions, occurring principally in the eyes and brow, with their concomitant sensations, represent the physiological menstruum of the individual's customary affect-symbolizations or projections. Correspondingly, of course, if there is the inadvertent admission again of the affect-image to the field of attention, there automatically ceases this experience of local tension in the exteroceptive area, and again the irritation with the person opposite becomes "real" in accord with one's projective preoccupation with him. But with consistent emphasis upon strains and tensions that are internal to the tissues, these strains and tensions are finally resolved. They are gradually recognized as conditions which are not native to the organism but which are extraneous burdens resulting from the affect-images it has become reflexly one's habit to project.

With continued attention in this direction one finally senses that, though hitherto unobserved, there are undue, unsuspected strains and tensions habitually existing within his own body-processes. More and more one discovers that these strains and tensions, though inherently alien to his organism, are yet actually present within him, and that in his projective preoccupations he had hitherto concealed them beneath his "irritation" with the person in question. With the application of this technique one becomes sufficiently fortified in his own experience to accept at their face value the pain and tension which have been all along registered in his organism but which have only now become recognized in physiological terms. And no matter how often

the old tricks of habit may lead him to this illusory tendency to affect-projection, he now knows that the basic cause of his irritation has to do with a disorder that resides within his own physiology.

That there are objectionable people in the world, people who because of their ignorance, their undependableness, their disregard for the comfort of others, their uncouth habits or their lack of personal hygiene, are not acceptable, is not to be denied. But a calm recognition of such persons as undesirable is one thing, and a moralistic attitude of hostility and resentment toward them is quite another. In the one case we are dealing with an objective reality and in the other with an hallucinatory affect that is purely subjective and pathological.

This whole notion of projection probably needs a thorough renovating anyhow. All our notions of projection in regard to the idea or image have probably been from the beginning in large measure colored by reason of the "sensations" we illusorily "project" as affect. But I wish it were possible to make clear especially the wholly unreal, fictitious character of the affect-mechanism to which psychopathology has given the name "projection." I do not mean that, in their effort to deal with affect, psychopathologists as individuals have employed fiction or illusion, as we ordinarily understand these terms, when they describe a commonly recognized function as the mechanism of projection. I mean that in its bearing upon man's affective life the commonly recognized function which psychopathologists and other students of behavior designate as "projection" is *sui generis* a fictional, illusory function. For in this process of mentation there is, of course, no actual projectile. There is no definite affect-path or trajectory, but only an imaginal one. So that the mechanism of projection, as far as concerns affect, is purely imaginal also. We "know" this, of course, but our knowing is only theoretical. It does not touch the organism's deeper processes. Our very knowing is again sponsored by the pseudo-authority of a mere affect-image. So that while we know very much about images and affects, we automatically overlook the fact that images and affects determine our "knowing." Similarly while we know very much about images in relation to feelings, we overlook the fact that they

are neither interchangeable nor fusible. Feelings are but another name for total organic functions. They always deal directly with the total object and cannot be employed by the projective mechanism of the symbol, image or word. The image-forming mechanism may be employed by the organism's primary total processes, but, as I shall try to make clear in the next chapter, primary, total processes may not, conversely, be employed by the image-forming mechanism. Nevertheless, in his present process of mentation this is the tendency of man throughout the species. Our present knowing rests almost wholly upon the illusion of the affect-image with its incompetence to express the organism's feeling-solidarity. That is, our knowing has become so completely dissociated in its "projective" symbol-formation that it possesses no intrinsic meaning for the organism as a whole. This confusion, as I have said, is not due to any intellectual misconception on the part of the individual. It rests rather upon a physiological maladaptation that is organic to the race. It rests upon the misadventure in development by which man as a phylum has come to employ a merely apparent or fictitious mechanism as though it were organically real. Because of the predominance of this purely imaginal mechanism over man's processes he has now become wholly enveloped in it, and in his consequent detachment from his primary and total feeling-processes he lacks to-day a basis of actuality from which to view organically his own confusion. Man is without a clear objective perspective upon this transfiguration of actuality he has unconsciously contrived to bring about within his own processes. For this reason there is the urgent need that man begin to take definite objective measures to offset this subjective tendency of inference existing within him. There is need that he acquire a practical, organic realization of the purely phantastic, chimerical nature of the partitive symbol or image when applied to the feeling-sphere.

Perhaps I should recall that by the partitive symbol I mean the image or symbol that is divorced from its directly inciting object or phenomenon and that exists solely at the behest of the individual's subjective affect. Only the faithful correspondence between the image or impression received by the organism on the one hand and the object or condition that directly incites it on

the other can give to the image or impression the currency of consensual objective value and render it socially negotiable. But to secure this correspondence the prime requisite is the organic correlation betwen the image-forming processes and the processes internal to the organism as a whole. The partitive image comes into existence primarily because of the absence of this organic correlation within the organism's total processes. In other words, there is an absence of consistency between the image and the object to which it is incident because of the absence of correlation between the image-forming processes and the reaction of the organism as a whole. In this circumstance image and feeling combine to form organically unwarranted affects and in consequence there occur within the organism of man as a phylum the many arbitrary, dissociative sensations and reactions whose outer emanations are reflected in the social symptoms of man's arbitrary "opinions" and "beliefs." It is these arbitrary opinions and beliefs which, when pushed to their extreme in the pathological isolation of the separate individual, become transmuted into the phantasies, hallucinations and delusions characteristic of psychotic reactions.

With a view to the organic stabilization of the symbol or image, it is of first importance to realize that the image or symbol as partitively recorded by the organism possesses of itself no actual dimensions. Now an object—a book let us say—obviously possesses dimensions, and these dimensions are capable of definite geometrical measurement. Similarly, the structural alterations, chemical and physical, which are produced within the cephalic segment of the organism when it symbolizes the object, book, by means of the thought or spoken word "book," also possess their specific dimensions. And these dimensions are likewise measurable, at least theoretically. In part they are actually so—take, for example, the eye-movements.[23] But the *meaning* subjectively (affectively) experienced concomitantly with the production of the partitive symbol "book," whether thought or spoken (*my* book, for example, or the book *I* wrote), is, of course, not a palpable substance possessing dimension and susceptible of

[23] Jacobson, Edmund, "Electrophysiology of Mental Activities," *American Journal of Psychology,* 1932, Vol. XLIV, pp. 677–694.

mensuration. Accordingly, the non-dimensional stimulus or symbol we experience subjectively as "meaning" is a mere function or coefficient of the object or phenomenon signified, and it is not competent to arouse an organic total-dimensional response. Such meanings, as I said earlier, are but epiphenomena. The subjective sensations arising from the organism's partitive system of reactions, whatever may be the bio-physical alterations involved, are composed wholly of these mere dimensionless meanings or mental emanations.[24] They no more possess the element of extension or trajectory than does the sense of happiness or the subjective appeal of beauty. Anxiety, for example, has no dimension. Elation and depression have no dimension. But one "thinks" they have dimension (that they are *real*) and "acts" as though they have dimension or are real. But always one is merely beating against the air and this is precisely the organic irreconcilability of such dimensionless "states of mind." It is precisely the fictitious nature of such mental meanings that has made it possible for us to assume as real the secondary adhesions between affect and image that form the invariable symptoms of psychoneurotic processes.

As regards the response of the total organism, on the other hand, with its internal environment and its total enveloping periphery, the situation is different. In this domain of hard and fast actuality there is no replacement of organic reaction with the substitutive and fictitious. No "as-it-were" images of reality cheat the total organism out of its own through the pseudo-function of mere partitive mentation. Here there is measurable projection, calculable trajectory, actual dimension. Through the alternating flexion and extension of the muscles with which the body and its parts actually move back and forth in space and time—in digging, sawing or lifting, for example—the total organism possesses definite dimension with which it reacts directly to the dimensional solidity of the outer world about it. Upon this motile response depends the very life of the organism. As has been said, while the specialized senses of the head and their appendages are primarily also a part of this multi-dimensional reaction, it is only through

[24] Burrow, Trigant, "The Meaning of the Psychic Factor," *The Journal of Abnormal Psychology*, 1913–14, Vol. VIII, p. 324.

their coördination with the muscular system as a whole that their function becomes contributory to the total reaction.

The result of the absence of an organic basis of judgment—of the organism's defaulting in its objective criteria of adjustment with respect to the world of actuality—is that man is now wholly subordinated socially to subjective "judgments" which are without a basis of reality. Of such is the "meaning" of our endless emotional conflicts, our prejudices *for* and *against,* our phantasies of good and bad, of like and dislike, of "you" and "me." And so it is required of us to recognize that, by reason of the fiction of projection within the sphere of the affect, man is constantly trying to give meaning to the symbol apart from the object that incites it. From the organismic frame of reference of the present thesis it is demanded that science include in its reckoning the profound morphological alterations of function[25] that have taken place within the species as a result of man's inadvertent misuse of the "projective" senses.

The importance of this objective phylobiological approach in dealing with the symptoms or affect-projections now registered in disordered mental states is obvious. It has the immediate merit of bringing such disorders within the legitimate field of medicine. Through this altered technique a patient is no longer required to trace his mental "associations." He is not required to search his ideas in order to discover the obstructive affects that are attached to them. He need only discover that the projective attentional process located in his head has assumed the function of negotiating neuromuscular tensions and alterations which belong to the organism's internal, empathic system of reactions. From this altered basis it becomes his task gradually to acquaint himself with a bionomic technique that will permit him to shift the habitual trend of his internal tensions from the symbolic segment to the domain of the organism as a whole.

Let us consider two typical illustrations of this neurotic, affect-projecting or, as I prefer to call it, semiopathic reaction. In the first instance the affect-picture is, let us say, unpleasant. It is a question of something the patient does not like. He is resentful

[25] Gesell, Arnold, "Behavior Pattern and Behavior Morphology," *Science,* 1935, Vol. 81, pp. 15–18.

and excited, or he may even be quite obsessed, and he wants something done about it. But he wants something done about it by some one outside of himself. He complains, he is dependent, the responsibility for his dissatisfaction is, according to his habitual feeling, in some person or condition that lies outside of him.[26] Perhaps he does not receive the love or attention or recognition he considers, or mentally "feels," to be his due. Perhaps he feels that he lacks some comfort or economic security to which he is entitled, or that he has lost the affection of some relative or friend. Here again, being occupied merely with ideas and images, he senses his discomfort as residing in some condition outside of himself. That is, the condition presents itself to him as lying along the path of his projective, exteroceptive experience, and consequently he looks constantly outside of himself for its adjustment. From the patient's projective basis it is impossible for him to do other than look for relief in some form of "projective" remedy. And so he forever continues to pursue this will-o'-the-wisp that consists merely of the linked idea and affect which he himself has projected.[27]

In the second instance, perhaps the image-obsession that occupies the patient is highly satisfactory to him. Perhaps he has what he wants in the loved object before him. But here too, as with the unpleasant or hated object, it is the projicient path of reaction with which the patient is preoccupied. Again the patient constantly projects his goal, he constantly "sees" his loved object in the form of a mere affect-image. So that, paradoxically, he is ever beset with possessive claims upon it. As with the unpleasant

[26] Compare Charles Richet, *Essai de Psychologie Générale,* Paris, Librairie Félix Alcan, 1930, p. 137. "En somme, les sensations que notre corps physique donne au *moi* ne fournissent que des notions très vague, et c'est surtout au point de vue de l'émotion qu'elles ont de l'importance.

"Les sensations avec émotion sont nombreuses, et on peut les ranger en deux classes, suivant que l'émotion est accompagnée d'attrait ou de répulsion, de plaisir ou de douleur.

"Malgré la très grande diversité des sentiments, dont les nuances sont infiniment variables, et quoique cette diversité aille souvent jusqu' à la contradiction on peut dire que tous les sentiments reviennent à être en définitive plaisir ou peine, attrait ou répulsion, bien-être ou mal-être.

"Cette émotion de l'organisme dépend non des objets eux-mêmes, mais de l'organisme récepteur. Les forces extérieures agissant sur nous sont impassibles; nulle qualité, bonne ou mauvaise n'est en elles. L'amertume n'existe pas plus dans la noix vomique que la douleur dans le trenchant d'un couteau."

[27] See note 7, page 52.

image, so here he claims a proprietary right in respect to it.[28] In this way his aim becomes automatically retroactive. For in his partitive quest he would reverse the organism's motivation. Being, through organic necessity, ever driven to reclaim his own projected feeling—a feeling which really exists internal to him—and not knowing, in his now preponderantly semiotic adaptation, how to do this, he can only seek blindly for compensation in the relentless urge to possess, to have control of, to legislate over his so-called loved object. Here is provided fertile soil for the development of disordered reactions within the empathic sphere—disordered reactions affecting the organism's internal neuromuscular system and reflected outwardly, symptomatically, in jealousy, self-doubt, competition, suspicion, irritability and the many dimensionless, self-defeating emotions which commonly adhere to the idea. Under these conditions the patient builds up phantasy upon phantasy, phobia upon phobia, delusion upon delusion. There are no limits to his sick logic, such is the length to which his wayward fancies carry him.[29] On the other hand, in response to a bionomic technique that is based upon a patient's total-attentional reaction, one observes in each of these instances the complete change in the personality as the patient learns to shift the weight of his interest from the affect-symbol or picture presented before him to the internal, tensional state of his own organism.

One must distinguish, then, between a static, geometric dimension and a functional, organic dimension. The organism as a functioning totality reacts to the objects of the outer world in its organic dimension. On the other hand, an object in the outer world which one perceives symbolically through his specially individuated system of perception—whether a book, a pebble or a person—possesses only a static, geometric dimension. Accordingly, in this specialized symbol-action, the image-forming mechanism of the organism performs a function that possesses also only a static, geometric character of dimension. But where in the organism's partitive mechanism of perception the object acquires

[28] See note 4, page 23.

[29] We are familiar with the marked emphasis psychiatry conventionally places upon these affective picture-reactions as they occur in their extreme expression in the individual, when it describes the delusions of *reference* characteristic of paranoid states.

affect-meaning, there occurs a confusion, a conflict between the organism's function in its organic dimension of response and its part-function as a static, geometric extension. So that where the organism's geometric dimension of the object tends to become invested with affect that is inherently alien to it—where the organism tends to crowd an organic dimension into a geometric one—there is only impasse and disaster.

The elimination of this arbitrary linkage between the individual's bi-dimensional pattern and his organic pattern of reaction—the separation of the organism's pictorial response from its response as a total process—represents the organic embodiment of the altered frame of reference to which I have already referred as a prerequisite in dealing with disordered behavior-reactions from a phylobiological basis of inquiry. This altered frame of reference, which will receive fuller consideration in Chapter Twelve presupposes the relinquishment of a static, geometric pattern of reaction as the sole and authoritative basis of bionomic adaptation and the restitution of the primary, organic pattern of reaction that is consistent with the phylogenetic status of the organism as a behavior-totality.

Where the patient has learned to retain the image but dismiss the deterrent affect that clings to it, he becomes an organically self-possessed personality. In his relation to himself and to others he achieves a self-reliance that is internal and organic. That is, he achieves a reliance upon the self which he senses within his own tissues and organs. This makes for an integral, self-contained reaction-type in contrast to a divisive, scattered and outwardly dependent type of reaction. For in this shift of the patient's neuromuscular adjustment to a total internal pattern of attention, he has assumed a bionomic relation to his surroundings that is synonymous with the health or wholeness of the organism.

One cannot sufficiently emphasize the social nature of the aberrant mechanism involved in the individual's affect-projection. Though it is a physiological condition that affects the individual organism, the condition represents an organic adjustment through which the individuals of the species make contact with one another socially. Where inter-individual contact rests upon an aberrant process within the organism of each individual, there

results an inter-individual or social organization whose processes are characterized by aberration. It is hardly necessary to say that the effect of this socialized aberration in producing such widespread reactions as war is incalculable. But it is not to be expected, of course, that war and the long line of socialized forms of disordered affect will be understood by man as reflections of aberrant processes within his own organism in the absence of a medical and biological recognition of the phylogenetic basis of affect-disorders in general.

Thus medicine is confronted with a challenge and an obligation that is both social and scientific. But until the progress of our cultural evolution permits us to sense the phylogenetic and intrinsic nature of our disorders of adaptation, both individual and social, medicine can only continue to regard these manifestations as separate and esoteric conditions peculiar to each individual. Accordingly, medicine must continue its fallacious attempts to remedy the condition with measures that are equally separate, localized and esoteric. With the acceptance, however, of a basis of observation that is broadly physiological and phylogenetic, our affect-disorders, individual and social, national and international, including war and similar disruptive expressions of the social organism, will come to be regarded as spasmodic reactions analogous to the infective processes occurring from time to time in epidemic form throughout the community. In this outlook medicine will come to employ definite physiological measures for offsetting these physiological disturbances now reflected outwardly in such manifestations as are socially observable among us.

There is really nothing novel about an approach to man's bionomic adaptation which proceeds from a basis that takes into account the internal organism and its periphery as a whole.[80] Such internal measures of the organism's behavior are a part of its every-day adjustment to the environment and, as a matter of fact, far antedate biologically the organism's adjustment to external conditions through the avenues of the external senses as connected with the image or idea. Even so apparently simple a process as walking is, in truth, one of the most difficult and com-

[80] Child, C. M., *Biological Foundations of Behavior,* New York, Henry Holt & Co., 1924.

plicated mechanisms which man has ever mastered. But such general bodily adjustments are not learned through the function of the special exteroceptive senses—through the static bi-dimension of the symbol-forming mechanism. They are acquired only through an acquaintance with the organism's total-dimensional reaction—a reaction that is dependent upon one's intrinsic sense of the balances and tensions controlling the neuromuscular apparatus as a whole. It would appear that what is lacking in man's general orientation is an internal appreciation of these processes in relation to man's disorders of adaptation that will allow of their directive systematization and control.

While a phylobiological technique may render them objectively, pragmatically controllable, these organic dimensions—these dimensions which, being intrinsic to the organism, are coterminous with one's very identity, will never be objectively described in the sense that I may describe symbolically an object existing in the outwardly perceived world of phenomena. I can describe to the entire satisfaction of the reader's symbolically receptive senses the appearance of a book, a bell or a house, let us say, as the book, bell or house appears to my symbolically receptive senses. But where it is question of the solid-dimensional function of my organism as a whole as it performs some act intrinsic to it—say the movement of the body required in twirling a baseball from the pitcher's box to home plate—I have no possible means of communicating to any one the detailed mechanism involved in the various bodily alterations—cerebral, neuromuscular, visceral —that enter into the act as physiologically performed by me.

Because of its picture-forming mechanism we may call the part-function of the cortical reaction-zone with its static bi-dimension the graphonomic or graphogenic system. In contrast to this local graphonomic system, the general bionomic system of adaptation with its total organic dimension may be known as the stereonomic or stereogenic system. The functions which belong to the stereonomic system may be measured and adjusted only through the recultivation and training of those kinesthetic or stereonomic processes that have to do with the adaptation of the total internal environment to the total external environment through the medium of the total periphery.

In connection with the relationship between the two reaction-systems existing in the human organism we may consider the experiments on animals performed by Pavlov and his school. In these experiments certain differentially conditioned reflexes were induced in response to quantitatively differing stimuli. Taking, for example, two tones of different vibration rates, as long as the animal sensed the two tones as discrete from one another the corresponding reflex reactions were carried out uniformly. But with the gradual approximation of the two tones to a more nearly equal vibration rate a point was reached where the behavior of the animal became completely disorganized. The animal's behavior throughout became excited, irritable and generally distrait. Pavlov characterized this disintegrative behavior in the animal as "neurotic." [31]

According to our experiments in phylopathology, the relation between the two differential reaction-systems existing in the human organism represents an analogy to the situation described in Pavlov's experiments.[32] As long as these two systems remain discrete from one another, the organism's responses to stimuli are performed without difficulty. But with the encroachment of reactions proper to the partitive (graphonomic) system upon the function of the total-reaction (stereonomic) system, there occurs a disparity in physiological patterns. This disparity in internal reaction-patterns causes a functional conflict within the organism. The disparity, however, as it occurs in the human or-

[31] Pavlov, Ivan P., *Lectures on Conditioned Reflexes, Twenty-five Years of Objective Study of the Higher Nervous Activity (Behavior) of Animals.* With an Introduction by Professor W. B. Cannon. New York, International Publications.

Very interesting work in the artificial production of "neurotic" conditions in animals has also been done on sheep.

Anderson, O. D. and Liddell, H. S., "Observations on Experimental Neurosis in Sheep," *Archives of Neurology and Psychiatry,* 1935, Vol. 34, pp. 330–354.

See also Razran, G. H. S., "Conditioned Responses in Animals other than Dogs," *Psychological Bulletin,* 1933, Vol. 30, pp. 261–324; *Conditioned Responses in Children. A Behavioral and Quantitative Critical Review of Experimental Studies,* Archives of Psychology, No. 148, 1933.

[32] While frequent reference will be made in these pages to the work of Pavlov, this does not imply an acceptance of his concepts on the physiology of the central nervous system. Nor does it mean that the author shares the atomistic views which are suggested by much of the work on the conditioned reflex. Certain aspects of Pavlov's investigations, however, appear significant in relation to the thesis here presented.

ganism, represents not only a disturbance within the individual but, involving as it does a complex of stimuli which are phylogenetically integrated, there results a functional conflict the manifestations of which appear also within the organization of society as a whole. Such, in our phyloanalytic investigations, is the underlying meaning of the process, individual and social, we see manifested in insanity, crime, community disorder and unrest.

It would appear, then, that there are in man extremely significant biological functions and alterations which are basic in the regulation and adjustment of the organism, but which are not observable through the avenues of the external senses. Though these processes are definitely accessible to objective study and control, they do not come within the category of phenomena ordinarily observable objectively through the avenues of the mental image or the idea. They are functions and alterations which do not belong to the sphere of the image or the idea as projected by the exteroceptive senses, but to those functional configurations that affect man's internal environment and that are therefore perceptible only in the measure in which the individual becomes the inside proprietor of his own organic processes.[33]

On this basis all the mental symptoms of conflict and disorder with their accompanying affect, as observable in the neurotic patient, are sensed as purely epiphenomenal manifestations—as

[33] Interesting studies by Gustav Bally ("Biologische Voraussetzungen der frühkindlichen Persönlichkeitsentwicklung," *Schweizer Archiv f. Neurologie und Psychiatrie,* Vol. XXXII, pp. 1–6; and "Die frühkindliche Motorik in Vergleich mit der Motorik der Tiere," *Imago,* 1933, Vol XIX, pp. 339–366) describe the early discrepancies in adaptation encountered by the infant. There are the instinctual, sensori-motor (animalic) promptings toward self-maintenance on the one hand and on the other the protective ministrations of the mother. The author presents the situation in very clear, biological terms. But this conflict between total animalic drives and those provisions of adaptation which are secured through the extraneous mediation of the parent has been recounted again and again by various writers and in various terms. What would seem required now is that this conflict that has been so well described externally receive some internal appreciation by us; that we, as organisms internally affected by the conditions we have described, now apply to these processes a method of investigation commensurate with their status as internal, neuromuscular behavior-reactions. We are not dealing with an extraneous phenomenon—not with some remote, external, projectively looked-at process—but with a condition that is subjective and inherent within the organism whose problem it is to locate and define this condition within itself in terms of intrinsic, physiologically perceptible reactions.

being but external reflections of an actual morphological condition existing internal to the organism. In accordance, therefore, with the study of the total physiological organism in relation to the environment, it is not in the artificial amalgamation of the idea and the affect that the meaning of man's conflict, either individual or social, is to be found. This conflict is to be found in the body's internal structures. It is to be found in those structures in which the function of the symbolic or graphonomic system has been brought into an artificial anastomosis with the function of the organism's total stereonomic system of neuromuscular alterations. In brief, it is in man's physiology, both internal and peripheral, that there is to be found the material to be observed and adjusted in face of those processes of man's behavior we see reflected outwardly in mental and emotional conflict.[84]

As long as medicine, and consequently the community, holds to an interpretation of insanity that is based upon images and ideas, the care and treatment of the psychoneurotic individual must be directed toward a programme of mental hygiene that can only encourage the patient to accommodate himself to the habitual community norm of adaptation, or to the wholly unstabilized, unscientific norm represented in the arbitrary "social images" which now characterize human adaptation on every hand. But in repudiating the customary mental interpretation of man's maladaptations of behavior as resting upon mere outer symptoms and appearances, I must repeat that we cannot repudiate the immense debt due psychiatry for the patient consideration it has devoted to these highly indicative symptomatic aspects of mental disorder. This debt is due psychiatry notwithstanding that in our characteristic mental interpretation of the functional psychoses and neuroses, we who are psychiatrists have necessarily been vainly laboring within and under the spell of the habitual limitations of a social neurosis. It is little realized how impossible is the burden that is now placed upon psychiatrists year after year by the social community through its ever increasing demand for the special care of patients on the basis of its own quite arbitrary, symptomatic

[84] In a recent formulation Holt has again emphasized the importance of the motor incident in mental activity.

Holt, Edwin B., "Materialism and the Criterion of the Psychic," *Psychological Review*, 1937, Vol. 44, pp. 33–53.

interpretation of their disorders. Because of the objective and phyletic nature of the disorder calling for treatment, the response of psychiatry can only continue to be a tentative one in the absence of its recognition of the biological basis of these outer symptomatic manifestations.

If, from a bio-physical basis of inquiry, it turns out that what we have been calling a conflict involving images and ideas is, in truth, a conflict within the behavior of the total physiological organism; if the apparent mental conflict is really an interference in neuromuscular patterns of response due to a confusion in man's attentional processes, and if this conflict involves the crossing, as it were, of neural impulses internal to the organism, we are, as often elsewhere in the field of science, compelled to take fresh soundings. Our psychic and symbolic recourses in behalf of individual and social maladjustments, as now interpreted, unquestionably possess the merit of serving as momentary palliatives and of maintaining a certain peace or temporary restraint in the midst of a world of insanity and crime. But, if we are to establish in the field of human adaptation a unitary principle of interpretation comparable to the principles prevailing in other domains of medicine, we are compelled to relinquish our present external, symbolic interpretations in the sphere of man's adaptive disorders and instead to adopt a programme of revaluation that will better accommodate itself to more objective structural realities.

CHAPTER VII

FALLACIES OF THE SENSES[1]

I HAVE already outlined the morphological basis of approach that underlies the principles of phylopathology and have indicated those modifications internal to the organism which correlate our findings with structural principles prevailing elsewhere in the field of medicine and biology. Consistent with this trend based upon experiments in phylobiology, we shall in the present chapter regard the mental reactions of the human organism, individual and social, as subject to and actuated by the same bio-physical principles of behavior that govern the reactions of organisms representing a lower scale of development. Despite theoretical assumptions, however, this premise is in actual life flatly contradicted by the attitude that prevails within societies composing the human species. Because of our conventional inside participation in these mental reactions we constantly fail to reckon objectively with the workings of our own internal processes and, instead, invoke opinions which attribute human behavior to quite secondary mental and moral causations. Doubtless were annelids to acquire opinions, their opinions would also become authentic as behavior-determinants within the phylum Annelida. But man, as an outside, disinterested observer of annelids, would not be swept off his feet by their misguided pretensions. He would still relate the behavior of this form of life to purely physiological foundations. While, however, it is not unnatural that man should fail to keep a clear head in respect to fallacies occurring within his own phylum; while, in his acquirement of mental concepts and opinions, it is not unnatural that man should have come to regard

[1] This and the following chapter were originally published serially in *Scientia*, 1935, Vol. LVII.

these opinions as determining the organism's behavior, it is nevertheless incumbent upon him to maintain the same premise in regard to the activation of human behavior that he holds toward the behavior of the annelid. It is necessary for him to discount his habitual opinions respecting the motivations of human behavior and, assuming an objective position in respect to his own processes, to observe and report these processes from a biological basis which differs in no way from the basis from which he studies and observes the reactions of the lower organisms.

The reader will understand by now that the present thesis frankly repudiates the medical significance of what is commonly reckoned as the "psychic factor" in the production of disordered states of adaptation. Among our human ephemera there probably exists no more vapid abstraction than the term or concept "psychic." Here is metaphysics with a vengeance, notwithstanding that it masquerades within the very courts of medicine and biology! In a biological approach to the problem of disordered states as they occur both in the individual and in the community—disorders represented in insanity, crime, in social disharmony and unrest—psychic symptoms represent what Thomas Huxley called mere "epiphenomena." From a strictly medical background such data must be regarded as but secondary emanations of more basic internal modifications. To attack these evanescent manifestations in one's effort to correct the organism's deviate behavior is comparable to attempting to extinguish a fire by attacking the smoke that rises from it.[2]

In psychiatry or in the domain of medicine which has to do with the adaptation of the individual to the external environment, a patient's disordered processes are invariably ascribed to the ideas or impressions entertained by him, and our corrective recourse has correspondingly been the substitution of other impressions and ideas because of their supposedly remedial influence upon the condition. In the attempt to alter this procedure and provide a working principle with which to meet these disorders of adaptation, my effort has been to introduce a conception which reckons certain modifications in the organism's total internal patterns of reaction as constituting the primary physiological ac-

[2] See note 7, page 52.

count of disturbances now commonly thought to possess a "psychic" or "mental" origin. It has been my effort to submit the view that this ideational or psychic account of manifestations, now described as the neurosis or psychosis of the individual, rests upon certain projective illusions in the sphere of man's thinking and feeling to which he has inadvertently become subject as a race or phylum.[8]

Evidence derived from experiments in reactions affecting the human organism as a whole gives indication that the interrelations of the visceral, neural, vasomotor and glandular systems occurring within the internal environment of man involve physiological reaction-patterns which respond in their form and distribution to the nature of the stimuli received from the outer environment. There is also indication that these internal patterns of response influence profoundly the neuromuscular tone of these various internal tissues and organs as well as their coördination with one another within the organism as a whole. Inadequacies, however, in the adaptation of social man to external projective situations now very generally involve false internal modifications within the organism as a race. The result is that in his present predominantly mental, external, projective adaptation, the individual as a participant in this racial inadvertence in function can only seek to repair these basic internal modifications, as well as their accompanying deficiency in internal tone or poise, with measures which are equally mental, external and projective.

The present thesis, therefore, takes the ground that there are wide-spread ineptitudes in physiological function which affect man's adaptation not only individually but as a social organism, and that these ineptitudes are due to interferences within the organism's internal reaction as a primary, total expression; that in the course of man's evolution certain secondary, partitive, restricted patterns of reaction have been engendered internal to the organism and that these restricted functions have seriously interfered with its balanced reaction as a total behavior-process. This impairment in the organism's internal modifications, this imbalance of tone or symmetrical response within the processes that

[8] See note 10, page 114.

compose the internal environment of man, is regarded in the present interpretation as the underlying causative factor in those disorders of adaptation, individual and social, for which we have hitherto attempted to account in terms of externally projected ideas and impressions.[4]

In speaking of the "total organism" and of the "behavior of the organism as a whole," it may be recalled that I am using these terms to express not the collective whole, but the organic whole. There is a difference here that calls for very careful discrimination. As I have said, while the collective whole means, of course, the entire sum of the parts composing a structure or substance, the organic whole means the underlying principle of motivation on which depends the organism's primary unity of function.[5]

The scholastics expressed this difference in the distinction of meaning rendered by the Latin *in toto* as contrasted with the meaning defined by the phrase *totum in illis*. The latter may best be paraphrased as "whole-heartedly" or "without reservation," but the former as "comprising every part of" or "including every element in." If this distinction is kept in mind the reader will be spared much needless anguish. Even where an organism undergoes serious mutilation and loss of its parts as an original collective whole, its primary motivation or its function as an organic whole may remain completely intact and unimpaired. Hunger, love, fatigue and curiosity may, in the sense of the organic whole, still continue as undiminished as when the body possessed all the parts belonging to it as a collective whole. So that the organism's function as a whole, as I use the term, means simply the function that is uncomplicated, undivided by partitive reactions which are differentiated from the organism's primary basis of behavior. The distinction is the more important as the meaning of "the whole," as here used, involves the organism not only as an individual but as a phyletic unit. But in any event the organic whole which is functional or behavioral has to do with the organism's unitary principle of action.

The studies of the behavior of the organism as a total reaction which seem to me the most significant of recent years are those of

[4] See page 153 for definition of "internal environment."
[5] Cf. page 116.

George E. Coghill whose thesis of a unitary principle of growth activating behavior throughout biological forms represents an outstanding contribution to the field of animal reactions. Working with Amblystoma, Coghill has established that "behavior develops . . . by the expansion of a primarily integrated total pattern of action and the individuation of partial patterns within the total pattern." [6] Studying the organism's reaction as a primary, integral pattern of behavior, this investigator found that from this unitary basis of growth, partial action-patterns developed secondarily. These partial behavior-patterns are, however, an integral part of the primary neural system and are always under the sovereignty of the total action-pattern. For instance, the early movements of an organism in relation to the external environment are diffuse, general movements arising from a central, undifferentiated neural system, and from this system partial action-patterns are only later developed. These secondary individuations of function are, according to Coghill, not accretions to but an outgrowth of the primary action-pattern.

There are, of course, in man numerous instances of such partial reactions which have become entirely automatic. The hands that manipulate a typewriter or play a piano have acquired a quite autonomous series of interrelated reflexes through which these parts have built up a sequence of action-patterns that are now independent of the total organism. But the hands have not become socially systematized into a nexus of reflexes which in reverting vicariously upon the total organism takes precedence over the function of the organism as a whole. These and similar part-functions, however independent or even "antagonistic," as Coghill would say, to the organism's total action-pattern, do not at any time assume a vicarious sovereignty over the organism as a totality. They do not, through a process of overt substitution extending throughout the phylum, assume arbitrary preëminence over processes that pertain to the phylum as a total organism.

But with the partial reaction-pattern that has become established inter-individually in the partitive or symbolic system of interre-

[6] Coghill, George E., "The Neuro-embryologic Study of Behavior; Principles, Perspective and Aim," *Science*, 1933, Vol. 78, pp. 131–138.

lated reflexes centring in the head the situation is very different. This phyletic innovation in man is in fact unique throughout the entire sphere of organic phenomena. Here the tendency toward independence or "individuation" is not only phyletic, but it has throughout the species assumed overt supremacy over the organism as a whole. That is, man himself has now become fictitiously enveloped in and affectively motivated by the symbolic, partitive system—a system that was originally employed by him under the sovereignty of the total organism in the service of the total organism.

As a physician my interest in the reaction of the organism as a whole arose primarily from the observation of disorders affecting the individual's relation to the social environment. These disorders of adaptation, known as mental diseases, appeared to be traceable to discrepancies between certain part-functions of the organism and the function of the organism as an integral unit. Because of the connection our investigations later established between these discrepancies of function and the wide-spread incidence of neurosis, crime and social unrest, I shall try to indicate here more specifically the physiological basis that underlies this discord and discrepancy reflected in the organism's disorders of function as a whole.

In establishing the physiological constituency of vertebrates in their development from a unitary pattern of growth, Coghill's investigations are of central importance. His work has to do, of course, with the principles of behavior or of motivation in lower organisms without reference to the feeling- or reaction-relationships inter-individually of these organisms. The investigations of my associates and myself, on the other hand, have centred upon the physiological basis of motivation in human behavior as observable inter-individually among the elements composing the species or phylum. Starting with the observation of behavior-reactions in the organism in their socially individuated expression, it has been my effort to reduce these manifestations to their simplest terms with a view to discovering the primary principle of motivation underlying these external, disparate expressions and, whether pathological or normal, to relate them to a unitary physiological principle of behavior.

The relation of man to the objects of the external universe and to others of his own species, or the relation between man's internal and his external environment, is mediated through the function of the peripheral senses. In addition, however, to this general bionomic set-up there is also in man the very special symbol-forming apparatus to which we have referred as mediating contact between the organism and the environment. By virtue of this latter mechanism social man is to-day immersed in a medium of impressions which now serves to connect each individual through a system of symbols with every other individual, as it serves to connect him with the world of external objects. With reference to this medium of symbols and to the symbol-forming function of man's organism, I should like, in re-stating more specifically my general premise, to submit the proposition that, contrary to man's belief and habitual practice, the symbol-forming function performed by the cortex and the adjacent external senses possesses no dynamic connection with, no physiological influence whatsoever upon, the internal organism of man in its primary motivation as a total behavior-process. I should like to submit the proposition that this partitive, cerebral mechanism activates only a correspondingly partitive behavior-response within the internal organism.[7] While it is by no means excluded that, from the point of view of structure or of the collective whole, this symbolic, partitive mechanism might secondarily affect the organism throughout its entire anatomy, it would still not replace or affect the organism's function in its primary motiva-

[7] I should perhaps again remind the reader that the word "partitive" as a term in phylopathology possesses a special connotation that refers to the function of organisms inter-individually, and it should not be confused with Coghill's use of the term "partial" to which, however, it is closely related. It may be recalled that, as here employed, the term "partitive" possesses a dynamic as well as a static signification. In its dynamic meaning "partitive" refers to the sphere of reactions which have been induced by the artificial anastomosis of symbol and affect when through a conflict in internal patterns the circumscribed partial function normally restricted to the cephalic zone, and normally mediating specifically only the organism's symbolic mode of adaptation, encroaches upon the domain of the organism's total feeling. The word "partitive," as I use it, refers specifically to a phyletic condition which in the course of man's evolution has become pathological. To repeat, this pathology consists in the organism's failure to keep separate its symbolic and its total fields of reaction, the result being that throughout the race the expression of the organism's primary feeling-motivation becomes entangled with its secondary semiotic expression and merges in the pseudo-composite of an affective social image.

tion as an organic whole. So that while the symbolic function restricted to the cerebral senses of man and operating among individuals inter-cortically is an outgrowth of the total organism and an integral part of it, this partitive function, though regarded everywhere by man to-day as primary, is only a secondary individuation that has now become quite autonomous in its relation to the organism's primary total reaction.

To exemplify what I mean in somewhat homely fashion, consider a railroad train in relation to the semaphore which signals a clear or a blocked track ahead. The train employs the semaphore to give the appropriate sign. In its semiotic or symbolic function the semaphore is the servant of the approaching train. This mechanical device is invaluable, but it is at no time an independent agent that controls or conditions the function of the train. While the train definitely produces a dynamic effect upon the semaphore, the semaphore is, of course, of itself quite impotent to produce conversely any dynamic influence upon the train. There is the circumstance too that we have not one train operating one signal but a highly organized railroad system operating a widely organized system of signals.

To re-state our proposition in the light of this analogy, the organism of man possesses an elaborate mechanical contrivance by which it may through external signs—words, gestures, symbols—give indication of trends resident within itself. Through this mechanism the organism may control not one but a whole system of signs and indicators. But these signs or indicators, being secondary and partitive, cannot turn about and, reverting upon man, control trends which originate in and are inherent to the organism as a biological unity. While the organism possesses a definite dynamic influence or control over the system of outer signs, signals or symbols constitutive of words or language, this system of outer signs, symbols or language is incapable of exerting a dynamic influence or control over the primary motivating function of man's organism as a total behavior-expression.

This invention of the symbol—this invention of the sign, the word or the language-method of intercommunication—is a tremendous asset in the evolution of man and, in its specific function, this symbol-forming process is consistent throughout the

species. Its function, however, is that of a purely mechanical system or code for communicating through external signs, signals or symbols. As such it is, undoubtedly, an invaluable short-cut for mediating inter-individual communication. But investigations in phylopathology give indication that the symbol-system of man, due to the external preëminence it has come to possess socially, has to a large extent usurped in its overt manifestations the position of the primary total process it was originally intended to supplement.[8] They give indication that inter-individual functions belonging primarily to the organism as a total process have been widely replaced through the substitution of quite arbitrarily individuated patterns with their correspondingly projected psychic components and affect-meanings.

This situation calls for the fullest emphasis. At the outset it is extremely important to note that the symbolic or cortical (partitive) system places man in relation only to the signs, images or symbols of persons and things, that it does not place him, in the sense of a functioning whole, in direct relation to the actual persons or things themselves. Man's relation to actual persons and objects has to do with the relation between man's internal and his external environment and involves the function of the organism as a total physiological process. For this reason when the sign or symbol reverts upon man's feeling-processes, it does not revert upon the organism as a total reaction but touches only upon those partitive, restricted patterns which respond to stimuli from the symbolic or cerebral segment. The vicarious ascendancy of the partitive, symbolic pattern may temporarily disturb the organism's general reaction but it cannot supplant the dynamic motivation of the total reaction. Whatever reverberations may extend from the symbolic system to the empathic or vegetative system are purely secondary, reflexive and inadvertent; they do not affect the organism's primary function as a total physiological process.

In this trespass upon the total organism through the use of symbols there is a purely histrionic, purely theatrical effect. The entire process constitutes for the organism a mere dramatic impersonation or imitation of sensations and feelings which in their

[8] Cf. page 117.

primary motivation are fundamental to the organism as a total process. Dramatizations of feeling or the pseudo-expression of feeling cannot really encroach upon and turn back the organism's essential feeling—its basic motivation. Notwithstanding the universal substitution in man of theatrical appearances of motivation in place of the motivations themselves, the essential motivations themselves abide unperturbed within the essential processes of our organisms. Semaphores on the rampage do not really affect the basic motive power of the trains. They seriously mislead and distort the movements of the trains in space and time, but they do not for a moment supplant the intrinsic motive power that operates the railroad's system of trains.

It is true that, among ourselves as subject, there is now every appearance that this reversal of the function of the symbol has actually taken place; that man—the phylum man—who first enlisted the symbol in his service, has now become the conscript of the symbol. This misapprehension is due to a wide-spread inadvertence on the part of the original inventor, man himself. It is due to the fact that in the course of his evolution there has occurred among the individuals of the species, as has been said, a misappropriation of this symbol of man's own inventing. Accordingly, in relation to the function of the organism as a whole, this device of so great value to man mechanically has taken on a quite isolated, arbitrary, private intent through the personal affect-meaning which each separate individual autocratically attaches to it. This distinction between the organism's total, systemic relations and its partitive, symbolic interconnections is of special importance in providing a central principle for the recognition and correction of those fallacies of the senses which express themselves in neuroses, psychoses and in kindred disordered processes.

Experimental studies of inter-individual reactions existing in the human species and observable among social groups give evidence that there is now a marked confusion between those internal processes which relate the total organism to the total object and those symbol-forming processes of intercommunication which relate the individual to the symbol or to the name of the object or person. There is indication that due to this confu-

sion there has occurred a marked impairment in man's thinking and feeling, or in the primary processes of man's inter-individual behavior-reactions. While the experiments to which I refer had their inception in the study of the confused sensations and reactions presented in pathological disorders, these sensations and reactions very soon came to be investigated as expressions common also to so-called normal individuals. But let us return to our analogy.

If I, as a member of the administrative staff of a railroad, am aboard a train which proceeds or stops according as the semaphore is in the vertical or the horizontal position, I do not feel vexed or in any sense imposed upon by the semaphore. Not at all. I placed it there, and I set it in operation precisely in order that it might serve me as a sign or symbol, and the semaphore has acted only in strict obedience to my own command. In its reaction with respect to the system that operates it, the symbol represented by the semaphore is completely consistent and dependable. Its performance corresponds rigidly to the function assigned it. But if semaphores as a genus should get themselves artificially systematized upon a quite private, arbitrary basis, and, assuming a wholly autocratic authority, should begin directing trains to and fro or bringing them to a sudden halt by arbitrarily rising and falling without regard to any coördinated plan of operation, the railroads and their personnel would find themselves in a sorry plight.

This hypothetical situation is precisely analogous to what has happened in the sphere of signs and signals which comprises the semiotic or symbol-forming function located within the cephalic segment of man. These signs and signals are now unwittingly giving all manner of arbitrary commands to the organism because, through the vicarious ascendancy of the symbol, man has inadvertently fallen victim to the illusory practice of attaching reactions and motivations, which are inherent in his organism as a total behavior-process, to these purely external signs. The consequence is that within a far wider domain of activities than he realizes man is being hauled hither and yon at the arbitrary beck and call of quite helter-skelter and unpredictable commands. As a result he becomes highly elated at one

time and depressed at another, good to-day and bad to-morrow, pleased with this man, angry with that one, at one moment satisfied, at another discontented; he affiliates himself now with this religious creed or political party and again with some other; under certain conditions he maintains arbitrary international covenants which under other conditions he as arbitrarily repudiates —and all this at the behest of emotional responses which have no dynamic connection whatsover with the primary motivation of his organism as a total functioning process. On the contrary, these reactions represent throughout the species a biologically spurious mechanism entailing a quite secondary and completely illusory reversion of function upon the symbol-domain of the organism. In short, the sign controls the organism; the semaphore runs the train! [9]

Since in the course of his evolution man has now established this illusory habit of attaching his feeling to mere partitive signs and symbols, it is not surprising that throughout the human species there should to all practical intents everywhere prevail the social conviction that feeling and thinking are partitive or symbolic processes, that they may be performed through the picture- or symbol-forming mechanism located within the cerebral segment.

It is not unadvisedly that I say we assume "to all practical intents" that thinking and feeling are symbolic for, as everybody knows, no psychologist would in his wildest moments think of positing, as a practical theory, a principle of behavior which would rest upon any such academic premise—upon the assumption that thinking and feeling are the expression of a mere external symbol or code. But on leaving his classroom this is precisely what the psychologist does. This is the basis of inter-individual exchange upon which the psychologist, like the rest of us, actually lives throughout his daily interreactions. In short, when the scientist is the ordinary daily human being, the scientist is caught up in precisely the same subjective presuppositions—in the same irritabilities, sentimentalities, likes, dislikes and gen-

[9] In literature as in life there are endless examples that offer illustration of the way in which people, like stage-puppets operated by invisible hands, may be the unwitting victims of automatic reactions induced within them by virtue of the symbolic stimuli of which they happen momentarily to be the particular butt.

eral irrationalities—that dominate the partitive convictions of his fellow human beings everywhere.

But despite the automatic prepossessions of psychologist and layman alike, feeling, whether with or without directive intent or thinking, is not a cerebralized, local, symbolic process. Feeling, whether or not it involves direction or thinking, only seems a cerebralized, local or symbolic process to the organism whose feeling has been arbitrarily shunted into the symbolic sphere of its social interchange. Feeling and thinking seem partitive because, in attempting to mediate between his internal and his external environment, man now universally employs this symbolic and localized segment of intercommunication quite adventitiously. But feeling and thinking are primarily total reactions expressive of the behavior of the organism as a totality. They inevitably involve the empathic, interoceptive system. On the other hand, the local, cerebralized and purely semiotic process restricted within the exteroceptive segment of man is, of itself, a merely lexicographic, stereotypic mechanism that has nothing to do dynamically with the primary motivation of the organism as a whole.[10] The local mechanism that comprises man's cortical code of symbols or of language is a mere extraneous system of ciphers adapted to the total organism's economic convenience. Man's inadvertence consists in the error of perception through which the external cipher or symbol—the mere code of man's thought—has displaced the physiological reality of feeling and thinking as a primary total process.

Viewed as a subjective experience, the effect of this displacement is an emotional projection and entails the vicarious introduction of what I have called an affective social image.[11] Through this affective projection the individual is arbitrarily led to assume a quite symbolic feeling-tone toward the external environment, and this feeling-tone reverts upon the subject in illusions of possession or claim upon other persons and things. In a specific application this affective projection or social image has been called the transference—positive or negative—but it corresponds quite simply to what is commonly signified under the

[10] See note 2, page 46.
[11] See note 6, page 28.

term "love" (or its opposite). Under the spell of the transference, or of love, whether toward another individual, toward oneself or toward an object in the external environment, one's assumption is that he voluntarily chooses the loved object on the evidence of its merit. But what actually occurs is that, within the partitive domain of outer code or symbol, the individuals or objects so loved and presumably chosen represent in reality but signs, symbols or name-tags which, like a system of semaphores run amuck, autocratically determine the subjective reaction which the individual calls his choice or love. Accordingly, under the influence of this emotional transposition, one does not see an individual; but, mistaking one's reaction to the symbol of an object or person for one's reaction to the object or person himself —confusing one's partitive with his organic reaction—one "sees" only the image or connotation by which the individual is arbitrarily symbolized. He "sees" whom he wants to see, not who is before him. As a result of this distortion of feeling or sensation within the organism it very generally happens that we fail to see what we look at, hear what we listen to or feel what we touch. In this way we have become a prey to definite fallacies of the senses. This is why, within the sphere of his feeling, man has come to prefer phantasy to actuality, to cherish preceptive habits of inference rather than cultivate experimental methods of inquiry, and to base his social interests and activities throughout upon reverie, emotion, theory, dream and psychosis; in short, upon such mental errors of refraction as belief, superstition and the wish.[12]

This error is, of course, an experience that is purely subjective, emotional. When man ceases to take himself and his opinions for granted, this subjective experience, this affective social image, will be viewed objectively and sensed as purely symptomatic. He will sense these emotional projections as reflecting his own substitution of a purely partitive or symbolic adaptation in place of his organism's function as a total process. But this the individual will not be able to do in his habitual social rôle of private, segregated persona. The individual may achieve this broader basis of social adaptation only as he accepts the function of his

[12] See note 16, page 58.

total organism in its generic as well as in its individual meaning.

Regarding the subjective reaction of man symptomatically, the mechanism of the transference, or the social image, appears to be somewhat like this: Affiliations or continuities within the processes that compose the internal environment are organically inseparable; within this sphere of man's intrinsic behavior-reactions the introduction of the symbol, or of the projicient avenue of connection with the environment, is an extraneous interposition and, in the organism's resistance to it, there occurs a physiological compromise.[13] The result is that the organism's urge toward the preservation of its primary integrity—its urge to recover the total organic reaction represented in its original basis of behavior—is converted into the compulsive drive toward acquisition or claim—a claim entailing quite distorted internal modifications which are reflected outwardly (symbolically) in the social image or the transference.[14]

In an analysis of the organism's false adjustment to meanings and evaluations due to a reversed and erroneous conversion of total function into the mere symbol, we find an outstanding symptom to be invariably present not only in the so-called neurotic personality but also in the normal individual. This symptom consists in the false sense-perception which leads him to an enormous exaggeration or over-evaluation of the personality-dimensions of others—a false sense-perception induced through the organism's partial (partitive) and vicarious projection-pattern. Other people appear to him as important, and this projected symbol of "importance" is accompanied by obstinate affect-adhesions. Such important persons become agencies or influences of outer control or effectiveness for the individual, and these persons are symbolized by him as good or bad. Accordingly he is drawn toward them or repelled by them. Yet in this symbolic interpretation his reaction is purely automatic and compulsive. He does not see that the "power" or "authority" of the

[13] The biological principle operative here was first noted by the author in a paper, "Hysteria and the Institution," that formed one of a series of lectures delivered in New York in the winter of 1917–1918, before the Child Study Association of America. The mechanism of this principle was subsumed under the general proposition I formulated at that time as "the law of vicarious equation."

[14] Syz, Hans, "Socio-Individual Principles in Psychopathology," *The British Journal of Medical Psychology*, 1931, Vol. X, pp. 329–343. See also note 8, page 52.

person outside him is due to an unconscious social charade in which he himself and the person opposite him—whom he "likes" or "dislikes," who "likes" or "dislikes" him, as one says—are partitively conditioned; that they are really drawn together or thrust apart as automatically as the marionettes in a puppet-show. He does not see that these persons are at all times completely dominated by the symbol which also completely dominates him. But in his defense-reaction to their exaggerated appearance of domination and importance he builds up in himself an image of domination and importance that is no less exaggerated.

We have just alluded to the tendency to over-evaluate the quality-dimensions of others as it characterizes the partial or symbolic sphere of perception and interpretation—a tendency to over-evaluation conspicuously operative in children. In his symbolically divided world of good and evil, other people appear to the child as great or overpowering influences or controls, whether for or against. People may have no more personality than semaphores, but it does not matter. The child sees them not in their natural organic proportions, but in the phantastic dimensions of their arbitrarily enlarged representation. He sees them as symbolically (partitively) exaggerated affect-pictures. This affect-automatism with which we symbolically replace the actuality of one another socially is the essence of the transference—the social conditioning of the organism which plays so large a rôle in the nursery, in the school and in the various clinics for the symbolic or psychotherapeutic "treatment of the individual."

But whether it is a question of the outgoing type or the ingoing type, whether it is the interruption of the individual's natural relation to other persons and to the objects of the environment, or the individual's self-centred reversion upon his own person, there is in either case an attempt to fill the organic gap by bridging the interval with a purely symbolic attitude which expresses itself in an *image* of satisfaction,[15] self-completion or organic integrity.[16] In both types of interrelation with the environment, it is the sign or semaphore that reversely operates the

[15] Satisfaction = making whole (*satis* + *facere*).

[16] In an early psychoanalytic paper the author attempted to show the frequent instances in which this principle is foreshadowed in the symbols of folk legend and tradition. See note 7, page 32.

organism's image-system, not the organism which, preserving its jurisdiction over the sign or semaphore, operates its system of images under its own autogenous jurisdiction. In brief, we have the widely disorganized situation in which the short-circuited symbol-system or the symbolic pattern of reaction, located in the cortex and activated to-day throughout the phylum intercortically, has overtly usurped the total organism's primacy and has now gotten completely out of hand among us by reason of the organism's uncontrolled submission to external signs and signals.

I should like again to call attention to the broad biological principle of development indicated in Coghill's paper, "The Biologic Basis of Conflict in Behavior." Here, in speaking of his observations upon Amblystoma, he says: "Normally, of course, the appendage never attains complete independence; it is always a dependency, so to speak, under the sovereignty of the total pattern." And again: "In the nervous matrix, particularly in the cerebral cortex, the most embryonic part of the brain, in which this organ of the total pattern grows, there is a constant tendency toward individuation, which tendency is the organic basis of partial patterns of all ranks, from local reflexes to multiple personalities." But always he insists that "normal behavior requires that the total pattern maintains sovereignty over all partial patterns." [17] He says elsewhere in similar vein: "The mechanism of the total behavior pattern is, then, a growing thing. Its reality as such gives scientific grounds for the interpretation of the development of behavior, or learning, in general, as the expansion of a unitary system within which partial systems arise as dependencies under its jurisdiction." [18]

While, as I have already stated, Coghill's studies relate to the development and behavior of the individual vertebrate, his findings in respect to the primary behavior of the organism as a whole offer neurological substantiation of my own investigations in the field of inter-individual behavior-reactions. In this field of inter-individual behavior years of research have forced upon me the

[17] Coghill, George E., "The Biologic Basis of Conflict in Behavior," *The Psychoanalytic Review*, 1933, Vol. XX, pp. 1–4.

[18] Coghill, George E., "The Structural Basis of the Integration of Behavior," *Proceedings of the National Academy of Sciences*, 1930, Vol. XVI, pp. 637–643.

conclusion, first that insanity, crime and kindred behavior-disorders implicate the phylum of man as a whole; second, that the phylum of man as a whole represents a total phyletic pattern of which man's behavior-processes inter-individually are integrated and organically coördinated elements. The prototype of this total phyletic "action pattern," with its physiological and morphological substrate, may be found in Coghill's thesis that the primary pattern of the individual vertebrate is a total reaction which expands normally from the beginning as an integrated and dynamic process.

It would appear, then, that in face of the appalling social situation before us to-day, in face of the grim economic paradox of millions starving in the midst of plenty, with insanity, social disorder, crime and war stalking among us, the machine that must be held answerable is not some mechanism operating outside of man. It is the human machine actuated by and within man himself. The really significant feature of over-production in the world of industry consists not in a surfeit of economic commodities, nor in their uneven distribution.[19] It consists in the markedly preponderant output of partial meanings and values which rest upon purely artificial symbols and which are produced through the organism's overworked cortical areas in substitution for the total organism's functional activity in its production and consumption of the materials and uses of actuality.

What the present study attempts to bring to book are the quite irrelevant, biologically displaced sensations and reactions that are habitually expressed under these outer insignia and that are now everywhere bandied about among us socially as though operated by an autonomous system of semaphores. It has attempted to challenge the resultant affront to the organism's bionomic economy that may be traced to those internal modifications which constitute the physiological substrate of sensations and reactions now reflected in our affect-appearances and symbolic equivalents. It would be incorrect, therefore, to suppose that in the ordinary sense of the word I have any quarrel whatso-

[19] Professor W. F. Ogburn has given a very succinct account of the relation between the machine and unemployment in his paper, *Living with Machines*, Chicago, American Library Association, 1933.

ever with the customary adaptations of external form, with our social codes and customs of whatsoever nature. However unintelligent our various ceremonials and observances may appear, they are the external reflections of more deep-seated causations internal to the phylum. So that the acceptations that have come down to us in folk custom and convention, however inept they may appear, are not problems for the scientific investigator. Our reflex and many-varied social formulae, the symbols and ceremonials of Church and State, of the school and the home, our legal and educational systems, our marriages and divorces, our many emblems and tokens of nationalism and internationalism, together with the thousand other ciphers and signals of man's outer adaptation—all these expressions, however seriously they may seem to merit inculpating from the conventional sociological view-point, are merely symptomatic, semiopathic,[20] and therefore lie wholly outside the domain of biological inquiry.

[20] Semiopathic, composed of the Greek words σημεῖον (symbol) and παθος (feeling), means, of course, *symbolized feeling*. But it is noteworthy that the Greeks used παθος interchangeably to mean *feeling* and *disease*—which, after all, isn't a bad idea if, as the present thesis attempts to make plain, disorder has laid hold upon the feeling of man throughout!

CHAPTER VIII

BEHAVIOR ABERRATIONS AND THEIR NEURO-SOCIAL BASIS

To illustrate what I have thus far discussed as a general biological principle, let us consider the reaction of any individual in his characteristic relation to the social environment. We may, according to the reader's personal delectation, choose either a neurotic or a normal type of person. Let us suppose that he attends some gathering in which there are persons who are deeply interested in what he has to say—in his work, his conceptions, in his view-point generally. In this case he senses about him a social environment composed of favorable impressions, of impressions and opinions which bespeak sympathy and approval of him, and from these outer signs or impressions he gathers in turn an impression of himself that is reassuring and encouraging.

Perhaps, though, the picture is quite the reverse of this. Perhaps our hypothetical patient or subject is given a cold shoulder. The impressions that now reach him are not reassuring and he is correspondingly depressed. For in the measure in which he has proved susceptible to the more flattering reception, he is to the same degree affronted by the less hospitable reaction of his social milieu. It is hardly necessary to remind the reader that the social milieu represents the same undependable basis of mood-reaction as our subject, that in its overt motivation this community-reaction represents a dissociation that is socially identical with that of the individual we are considering. Keeping this circumstance in mind, we may return to the situation as it is commonly interpreted. The ordinary explanation of this situation runs simply enough: In the first instance the individual feels that he has been well received

and he is duly pleased; in the second, he has not been accorded so affable a reception and by the same token he is not so pleased.

This interpretation is quite in line and entirely satisfactory according to habitual acceptations, but this is just where the difficulty lies. In his social relationships man is now completely inured to explanations of behavior which rest upon a partitive basis of adaptation, and any interpretation of his behavior is of necessity equally partitive. From the standpoint of phylopathology, on the contrary, one is confronted in the above situation not with the seemingly simple condition in which the subject is pleased with a flattering reception or in which he is affronted by impressions of a hostile sort. One is confronted with a highly complex condition in which the behavior of the individual is in both instances selective, partitive; in which his behavior represents a secondary response to an environment of signs, symbols and outer impressions to which he is now reflexly subject. From the basis of the organism as a whole, however, this reflex response of the organism to isolated impressions is wholly fictitious. The discrete, isolated reaction is not competent to determine the reaction of the organism as a whole. In the case cited the isolated reaction-instance (the response to a pleasant or a hostile impression) is not the cause of the subject's general behavior-mood; his general behavior-mood is the cause of the isolated reaction-instance.

In seeking an explanation of such reactions, therefore, the phylopathologist has first to free himself from tendencies of interpretation which confine themselves merely to the domain of outer impressions, or to impressions which are restricted within the reticular system of responses that constitutes the organism's social code of external signs and signals. This mental or symbolic explanation of the organism's behavior is not sufficiently medical or biological. It is an account that fails to assign the criteria of behavior to those internal processes in which the organism's motivation to behavior resides. Instead, they are assigned to the collective ideas and opinions or to the epiphenomena which are concomitant to the organism's partitive responses and which interrelate the individuals of the species only quite superficially as compared with the organism's total system of reactions. Such an

account, it is true, is consistent with commonly prevailing interpretations of human behavior. But in ascribing the reactions of the organism in the above instances to causal agencies which are purely projective, semiotic or "mental," it gives to the merely symbolic sphere—to the external signs and signals now employed by man in explanation of his internal states—the dynamic authority of these internal states themselves. This is to put the cart before the horse. It is to parallel in the domain of human interchange the conditions under which the semaphore becomes the dictator of a railroad system rather than the railroad system remaining the dictator of the system of semaphores which the railroad has itself devised and placed in operation for its own use.

Perhaps we shall be assisted if, returning for a moment to physiological rudiments, we will consider our problem in the light of certain accidentally conditioned reflexes that have arisen in the course of man's development as a race. We are already familiar with the artificially induced conditioned reflex in which a stimulus otherwise inert in respect to a certain function or activity becomes the determinant of a definite physiological reaction by being produced coincidently with the stimulus that normally incites this physiological response. For example, to cite the typical instance of the behaviorists: If coincident with presenting food to a dog and thus stimulating salivation, a note of a given rate of vibration is sounded on a tuning-fork, it is found that after sufficient "practice" the mere auditory stimulus produced by the tuning-fork will incite the activity of the salivary glands.

In addition, however, to such selective reactions intentionally produced in the single individual of a species, there are countless partial reflexes similar to this which are phylogenetically conditioned and which occur quite spontaneously. With the sudden splintering of a tree, let us say, by a falling rock, the response of primitive man consisted in the reflex closure of the lids as a protection to the eyes against the flying debris. To-day civilized man, sitting in the quiet security of his study and hearing a loud explosion a block away, automatically blinks his eyes. Though the primary stimulus to blinking, namely, the protection of the eyes against foreign material entering them, is completely absent,

yet the habitually associated stimulus—the sudden noise or loud report—still automatically causes in man the reflex of blinking.

There are, of course, endless examples of such accidental conditioning stimuli causing a partial or selective response within the organism, as there are also accidental conditioning stimuli which produce a response of the organism as a whole. An instance of the latter may be seen in the change in reaction-pattern which the behavior of the child undergoes when suddenly frightened by an animal, let us say. Ordinarily a child will approach a cat, for example, with confidence and without hesitation or misgiving, indicating his pleasure by patting and stroking the animal. But if the cat suddenly becomes angry and, arching its back, attacks the child, the next time a cat is brought near the child, his entire behavior-reaction is altered. He now shrinks away, clings to his nurse, trembles, cries, breathes rapidly and shows marked indications of change in the general muscular, neural and glandular systems of response.

Another instance of the accidental conditioning of the organism as a whole is to be found in the classical story of the Franciscan monk and his favorite dog. The dog, accustomed to accompany the monk on his daily walks, would, according to the story, halt beside his master when at the sound of the Angelus the priest stopped to repeat his customary prayer. The monk died, but at the ringing of the Angelus the dog would immediately stop wherever he happened to be roving and remain still for the length of time the monk had been accustomed to stand in prayer in response to the bell.

Undoubtedly students of conditioned reflexes have contributed greatly to an understanding of the organism in its response-mechanisms, but the work of the behaviorists fails to establish a basic principle that permits of consistent correlation of their findings with general biological principles governing the growing organism as a whole.[1] The conditioned reflex rests within an interpre-

[1] This may be seen from a consideration of the point of view of Goldstein and his neurological position in relation to the function of the organism as a whole. "In jeder Leistung, die wir mit der Tätigkeit eines bestimmten sensorischen oder motorischen Apparates in Beziehung bringen, steckt die Leistung des zentralen Apparates darin und umgekehrt. Beide, die Leistung des zentralen Apparates und die dereinzelnen Sensorien und Motorien sind überhaupt nur künstlich aus der Gesamtleistung herauszulösen, sie stellen nur Momente der Gesamtleistung dar.

tive setting that regards such responses as independent and isolated reactions, the sum of which gradually builds up the behavior of the organism as a whole. This interpretation, however, relates to reactions which contribute to the expression of the organism as a *collective* whole. It quite fails to take cognizance of the organism's reaction as an organic whole.[2] This trend toward a summative interpretation of the organism—toward its interpretation as a series of independently collected reactions rather than as an outgrowth of the organism as an organically integrated whole is directly contradicted by the findings of Coghill and other recent investigators. As I have already mentioned, Coghill regards reflexes, both conditioned and unconditioned, as purely overt, individuated expressions arising out of the organism's primary reaction as a total behavior-process.[3]

I was speaking, though, a moment ago of specific incidents in

Immer handelt es sich um eine einheitliche Leistung, die die gesamte Hirnrinde umfasst, deren einzelnen Abschnitte nur gewisse Sonderleistungen zukommen, die aber immer nur innerhalb des Ganzen und abhängig vom Ganzen vor sich gehen." (Goldstein, Kurt, "Das Symptom, seine Entstehung und Bedeutung für unsere Auffassung vom Bau und von der Funktion des Nervensystems," *Archiv für Psychiatrie,* 1926, Band 76, pp. 84–108.)

We should also mention, of course, the work of C. S. Sherrington, *The Integrative Action of the Nervous System,* New York, Charles Scribner's Sons, 1906; Adolf Meyer, "Objective Psychology or Psychobiology with Subordination of the Medically Useless Contrast of Mental and Physical," *The Journal of the American Medical Association,* 1915, Vol. LXV, pp. 860–863, "Genetisch-dynamische Psychologie versus Nosologie," *Zeitschrift für die gesamte Neurologie und Psychiatrie,* 1926, Band 101, pp. 406–427; C. von Monakow, "Die Syneidesis, das biologische Gewissen," *Schweizer Archiv für Neurologie und Psychiatrie,* 1927, Band XX, pp. 56–91.

As we know, similar principles have also been formulated by the *Gestalt* psychologists.

Wertheimer, Max, *Drei Abhandlungen zur Gestalt-theorie,* Erlangen, Verlag der Philosophischen Akademie, 1925.

Köhler, Wolfgang, *The Mentality of Apes,* London, Kegan Paul, Trench, Trubner & Co., 1925.

Gestalt Psychology, New York, Horace Liveright, 1929.

Koffka, Kurt, *The Growth of the Mind,* London, Kegan Paul, Trench, Trubner & Co., 1924.

Though their attempts have at times not been uninfluenced by certain philosophical precepts, the biologists also have attempted to understand the function of the organism as a total process, for example, J. S. Haldane, Joseph Needham, Jacques Loeb, H. S. Jennings, Eugenio Rignano, L. Bertalanffy and H. Driesch.

[2] Cf. page 116.

[3] "The conditioned reflex, like the unconditioned, is acquired by analysis of a total pattern which under normal conditions is from the beginning perfectly integrated." (Coghill, George E., "Individuation versus Integration in the Development of Behavior," *The Journal of General Psychology,* 1930, Vol. III, pp. 431–435.)

which an organism—a child, a man or an animal—responds reflexly to a given stimulus. The incidents cited were those with which all of us are quite familiar. In the present inquiry, however, we are considering the organism's response to conditioning stimuli, in which the reaction is phyletic as well as individual, but in which the reaction, whether regarded in its individual or in its phylogenetic expression, represents a partial or selective response. For we are now considering the reflex produced partitively or selectively when in response to a vocal sound or word there is produced "mentally," that is, in the restricted exteroceptive segment, the "visual impression" or mental recognition of an object when the object itself is no longer present to act as a direct stimulus to the retina.[4] This linguistic reflex built up of an entire code of signs or symbols constitutes for man to-day a constellation or system of partitive responses which now quite segregates itself from the rest of the organism. *This reflex system of image-reactions thus constellated and localized within the anterior segment of the head constitutes a system that now habitually tends to operate socially as though quite separate and independent of the total phyletic organism.*

Needless to say, the organism as a whole retains its system of total reflex-responses quite apart from the selective, partitive or conditioned system of reactions newly interpolated through the accidental "invention" of the symbol and now embodied in the highly complex system of responses we know as language. Warmth, cold, pain, hunger, pressure, fatigue and the somatic sensations generally still affect the total organism of man as of other animals and influence reflexly its general body-state. Inherently there is no conflict between the total system and the symbolic system of reflexes. As long as the conditioned reflex represented in the cortical, linguistic or symbolic response of the organism remains

[4] The impression derived from an object and the reflex associations which its presence may excite—say, an animal which may under provocation attack one, frighten one's children, or prey upon one's domestic fowls or other property—is a very different impression and leads to a very different response in the organism from the response produced by the mere visual image established socially through the corresponding vocal sound "fox." The response to the first impression, if sufficiently strong, is one of action—of action that affects the total organism. The response, however, to the visual impression that is merely identified nominally through the laryngeal reflex, as the word "fox" is pronounced, leaves the total organism completely passive and inert.

systematized and circumscribed within its proper domain, the reactions resultant upon stimuli occurring inter-individually within this domain are, like the conditioned reflex of the dog in response to the tuning-fork, simple and uncomplicated.

As mentioned earlier, Pavlov and his students have carried out experiments in which differentially conditioned reflexes were also induced.[5] In addition to the type of experiment described in which salivation was reflexly produced in a dog in response to the note of a tuning-fork, experiments were undertaken in which positive and negative responses were conditioned to stimuli belonging to the same category, and very similar to one another. For example, a salivary response was conditioned to a metronome beating at the rate of 120 beats per minute through repeatedly presenting the metronome to a dog simultaneously with offering it food. After this response had become firmly established, a negative salivary reaction was induced in response to a metronome rate of 60 beats a minute through the procedure of withholding food from the animal when this rate was presented. The appropriate responses were soon consistently carried out by the animal according to the stimulus given. As long as the two stimuli were kept sufficiently distinct from one another, the reaction of the animal remained consistent throughout. There was salivation in response to the metronome producing 120 beats per minute, and the reaction was negative to the rate of 60 beats. And even upon increasing, within limits, the slower rate of vibration, or decreasing the faster rate, that is, having the vibration rates of the two metronomes approach each other more closely, the animal's discriminative reaction was unimpaired. But a point was reached when, with a too close approximation of the two vibration rates, not only were the responses markedly disturbed, but in several instances the reactions of the dog, dependent apparently upon the temperamental type of the animal, became generally distrait. The dog showed a decided change in disposition. It became fearful, suspicious, undependable, and even savage, and in general showed decided "neurotic" reactions.[6]

[5] Cf. page 169.

[6] The following analogous experiment reported by Pavlov is also interesting. "The experiments in question were made to determine the limits of the analysis of shapes of different objects (experiments of Dr. Schenger-Krestovnikova). A

As long as the dog in the experiment described above was able to maintain the two differentially conditioned reflexes separate from one another, all went well. But as soon as the two circumscribed systems of response began to merge into one another—as soon as they ceased to remain circumscribed each within its own reaction-sphere—the animal showed an entirely altered reaction-total and there followed a complete disorganization of the "personality." [7]

Temporary neurotic reactions have also been experimentally induced in children in response to conditioning stimuli which had been brought into a too close approximation. Panferov, working in Krasnogorski's laboratory, produced such a temporary disturbance, or a so-called "experimental neurosis," in a normal six year old child in the attempt to develop a differentially conditioned response to two very similar stimuli. The child, who had first been trained to respond with a positive motor reaction to a metronome of 144 beats per minute, was trained to exhibit a negative response when the metronome was beating at 92 strokes per minute. Upon approximating the two stimuli too closely (upon raising the lower beat to 132 per minute) the differentiation broke down. The accompanying general behavior of the child is de-

projection of a luminous circle on to a screen in front of the animal was repeatedly accompanied by feeding. After the reflex had become well established a differentiation between the circle and an ellipse with a ratio of the semi-axes 2:1, of the same luminosity and the same surface area, was obtained by the usual method of contrast. A complete and constant differentiation was obtained comparatively quickly. The shape of the ellipse was now approximated by stages to that of the circle (ratios of the semi-axes of 3:2, 4:3, and so on) and the development of differentiation continued through the successive ellipses. The differentiation proceeded with some fluctuations, progressing at first more and more quickly, and then again slower, until an ellipse with ratio of semi-axes 9:8 was reached. In this case, although a considerable degree of discrimination did develop, it was far from being complete. After three weeks of work upon this differentiation not only did the discrimination fail to improve, but it became considerably worse, and finally disappeared altogether. At the same time the whole behaviour of the animal underwent an abrupt change. The hitherto quiet dog began to squeal in its stand, kept wriggling about, tore off with its teeth the apparatus for mechanical stimulation of the skin, and bit through the tubes connecting the animal's room with the observer, a behaviour which never happened before. On being taken into the experimental room the dog now barked violently, which was also contrary to its usual custom; in short it presented all the symptoms of a condition of acute neurosis." Pavlov, Ivan P., *Conditioned Reflexes—An Investigation of the Physiological Activity of the Cerebral Cortex,* Oxford University Press, 1928, pp. 290–291.

[7] See the recent work of Marinesco, G. and Kreindler, A., *Des Réflexes Conditionnels, Études de Physiologie Normale et Pathologique,* Paris, Librairie Félix Alcan, 1935.

scribed as follows: "The patient had become nervous . . . he cried often . . . a general inhibition developed during the experiment (sleep), while the whole behavior of the child was changed." [8]

These reactions are of interest in their analogy to our phylo-analytic experiments. For, as I have said, experimentation in social groups gives indication of the existence of a parallel phenomenon in the human species—a phenomenon that is phylogenetic as well as accidental. In the constellation of conditioned reflexes occurring in the human phylum through the development of the symbol or of language, there was reflexly induced a partitive or localized alteration in the behavior of the organism. With the gradual evolution of the species such symbol-reflexes became more and more organized and differentiated from the reflexes occurring within the organism as a reaction-total. And, as in the case of Pavlov's dogs, as long as the two systems remained circumscribed within the reaction-zone proper to each, they were not confused one with the other and all continued to proceed smoothly. Though the reactions of the organism circumscribed within the domain of the symbol represented a highly constellated system of responses, there probably occurred at first no essential intrusion upon the function of the organism as a whole. It is conceivable that man originally employed the highly useful reflex-system constitutive of the cortical or symbolic responses with entire impunity. Indeed it should be possible with man to-day for this highly developed complex of symbol constellations to constitute within each individual a separate and distinct quasi-identity or symbolic "personality" holding its own as an integrally individuated part-reaction of the phyletic organism as a totality. But apparently it is imperative that this system of accidentally induced conditioned reflexes remain functionally distinct from the system of responses presided over by the organism's total proprioceptive function. The exteroceptive or symbolic zone of reactions may not encroach too far upon the interoceptive feeling-reactions of the organism or upon the total empathic system. Where this overlapping occurs there is a disturbance in the overt manifestations of the organism as a whole. There is an interference with the

[8] Krasnogorski, N. I., "The Conditioned Reflexes and Children's Neuroses," *American Journal of Diseases of Childhood,* 1925, Vol. XXX, pp. 753–768.

processes of the organism as a total reaction and a resultant disorganization of its behavior throughout. As long as the organism's reflex responses are categorically intact, as long as the two fields of man's discriminative responses, the total empathic and the partitive, are kept discrete from one another, the reaction of the organism as a whole also remains unified and intact. It is when internal feeling tends to be released from the general empathic system, and attaching itself to the symbol or idea is projected as an affect, that there occur those inroads upon the organism's total equilibrium which in their extreme form lead to neurosis and disorganization.

One sees this conflict well illustrated in an individual when in early childhood—at the age of one and a half or two years—he gives indication of rebelliousness and disquiet. It is in this period that a timely administration of spankings usually brings the child into temporary conformity to the symbol. But at puberty, when the organism feels a fresh urge toward the assertion of its function as a total reaction, again conflict shows itself in a disposition to unruliness and "independence." It is at this stage of the organism's wider social assertion that society's partitive restrictions again intervene, and in his protest the individual not infrequently has recourse on the one hand to schizophrenia or split personality, and on the other to crime or breaking away (*Verbrechen*). The result is that society must once more step in and see to it that the individual, now completely unable to conform to society's partitive basis, is either confined in an asylum or sent to prison.

As has been emphasized in an earlier chapter, medicine is not primarily occupied with symptoms, but with the disease itself. When medicine will have recognized the internal disease-process answerable for man's external disorders of adaptation, it will lose no time in addressing itself to the actual lesion. But there is some comfort in recognizing at least that the symptoms indicative of man's disordered state as a race or phylum are being slowly brought to awareness in spite of ourselves, that in spite of ourselves the manifestations of our community-pathology are becoming more poignantly sensed within our national and international consciousness. Consider, for example, the following brief clinical picture illustrative of man's wide-spread social conflict:

"It is a simple plan [the Rosenberg-Hitler plan for remaking Europe] and one which is guaranteed to solve all the problems of Germany and Poland at the expense of Soviet Russia. . . . First of all, Poland is to surrender the Polish Corridor to Hitler. Second, there is to be a nice big war, one which will keep all the armament factories busy and settle the unemployment problem. Third, as a result of this war, Russia is to lose the Ukraine (territory 175,000 square miles; population, about thirty millions). Fourth, Poland is to get half of it, including the Black Sea port of Odessa, as payment for the Polish Corridor. Fifth, the other half of the Ukraine, lying east of the Dnieper River, is to be divided into German, French and British spheres of influence. Then everybody would be happy—everybody, that is, who survived a war in which millions are certain to be killed in battle, and other millions to perish by plague, famine and revolution. In a sane world there would be special asylums for people who made plans like this, but instead they become European dictators, peers of the British realm and owners of great daily newspapers. If the world gets any crazier, the few sane people remaining will have to retire into an asylum." [9]

Another syndrome reflecting our mass pathology is described in an article by Jean Galtier-Boissière and René Lefebvre called "Europe's Greatest Racket." According to these authors wars are made by the barons of "heavy industry" or of armament. Their paper quotes a statement by Pierre Cot, deputy, member of the Foreign Affairs Committee and subsequently a member of the Daladier cabinet:

"It is not a secret to anybody that the makers of guns and munitions foment international disagreements or make quarrels more venomous so that they may secure larger orders and profits. It is no secret to anybody that certain press campaigns have been paid for by men who are preparing for war and are making others do the same."

Then there follows this passage:

"War: to divest one's neighbor of his iron and his oil, to smash his industry and his economic power, to capture his business and take his place. For sincere love of country, for national policy and social welfare, French, German, and English industrialists are shamelessly substituting their private interests. They are trying to impose on each nation their own short economic views and are identifying the destiny of the nation with their own voracious appetites, which are patriotically disguised by an insidious propaganda. Will not politics some day take its revenge, recapture its true value, and reduce these new and arrogant feudal lords to their proper place?" [10]

[9] Editorial, *The New Republic,* December 13, 1933
[10] *The Living Age,* December 1933.

What better illustration of the phyletic misplacement of affect throughout the organism of man! But, in these neurotic reactions of peoples, it is not recognized that nations cause the reactions of overlords as truly as overlords cause the reactions of nations, and that all remedy is excluded in the absence of a sense of this disordered adaptation as a condition affecting the internal processes of the race as a whole.[11]

Such, in the phyloanalytic observations of my associates and myself, is the physiological meaning of the reactions which have come to express themselves in man, individually and socially, in neurotic manifestations—in the conflicts of feeling, judgment and behavior that now characterize the reactions of the individual and the community throughout human society generally. We may not expect, however, to gain a comprehension of the phyletic condition with which we are confronted in these disturbances in man's differential fields of response, except as we realize that we are dealing with conditions which affect and are experienced by and within our own organisms. We cannot acquire an effective acquaintance with the real situation unless we realize that this condition which has arisen in the course of man's development individually and as a race has arisen *within* us, that it is not a condition which we may look at as we may look at annelids, Amblystoma, the guinea-pig or any other phenomenon existing outside of ourselves. It is a condition that is appreciable by us only within our own organisms, and consists of the interpolation racially of accidentally conditioned reflexes or partitive reaction-patterns which, if we are to maintain ourselves in a state of health, must be kept distinct from the response of the organism as a total reaction-process.[12]

[11] This distribution of responsibility throughout the body politic was the burden of a paper, written some years ago, in which I attempted to show the *causal interrelationships* of "social" factors commonly reputed to be related as *cause and effect*. ("The Heroic Rôle—An Historical Retrospect," *Psyche* (London), 1926, Vol. VI, pp. 42–54.)

[12] So many people think they "get" the physiological import of this physiological thesis—get it, I mean, within themselves physiologically—when all that actually happens is that they get but a picture of the physiological alteration I am talking about. They do not realize that what I am talking about has been acquired solely as a result of the laboratory process that has been brought to bear upon my own picturing functions as these picturing functions tend to replace the physiological primacy of my organism's behavior as an element within the phylum.

But this is the sort of thing I am told I should forbear to mention, as it "irritates" the reader. But if the reader is irritated, the more strength to him!

From the foregoing considerations it would appear that, in the sphere of man's social or inter-individual contacts and relationships, there is required a more basic biological interpretation of what these relationships are.[18] In man's inadvertent substitution of a partitive or symbolic reaction-pattern in place of the organism's total bionomic response, or with the introduction throughout the phylum of those internal alterations and tensions which represent the physiological concomitance of the idea or image—an innovation through which partial patterns now attempt to function as the vicarious carrier of total internal responses—the resultant internal pattern of the individual organism necessarily takes on a partitive, affective cast. As I have already said, however, this does not mean that the partitive pattern can at any time supplant the dynamic primacy of the organism as a total reaction. Not any more than the semaphore can supplant the train. What happens is that the organism is now subordinated to divisive, conflicting reflexes which express themselves in halting, intercepted and partitive reaction-processes. The responses of the organism are no longer full, round and balanced. In short they are neurotic.

The physician is daily confronted with these limitations of

For this means that a thesis which is addressed to the reader's deeper reaction-processes is reaching those processes—that, as the phrase goes, it is getting under his skin. Under his skin is precisely where it belongs. But in its over-defensive function the skin has become so morbidly sensitive a protector that before anything can get under it there is the cry of the "I" (a purely skin-deep, proprietary persona) that it is "right" in its irritation, that any offending element is *ipso facto* an unjustified affront and therefore "wrong." But just how far, I wonder, would any of us get on the operating table or in the dentist's chair if our irritation incriminated the surgeon or dentist and warranted our protest? *Of course* we are irritated. But our irritation is precisely a measure of the organism's need of remedial aid. While I do not wish on my side to withhold due acknowledgment of my own lack of deftness in the use of the descriptive tools I employ, the aspect on the other hand that concerns the delinquencies of the student or patient requires to be put in its proper bio-physical relation. I mean that in the phylobiological readjustment of the organism there is need to recognize that the reaction of irritation may be quite wholesome without in any way incriminating the irritant.

[18] Vilfredo Pareto's trend represents a marked advance toward a more comprehensive and inclusive interpretation of the problem of human behavior. With the introduction of the broad "categories" in which he constructs a symptomatology of human reactions, there is to be seen a programme that is social as well as individual. But Pareto is dealing with purely symptomatic material. His approach is mental, intellectual. While his interests are comprehensive and his method systematic, his thesis has to do only with the external, symbolic, mental indications of man's disorders of adaptation. However valuable it may be in the field of sociology, Pareto's work can hardly assist a phyletic comprehension of the organism's internal pathology.

function in the various forms of organ-neuroses occurring in the individual, and they are graphically portrayed also in those postural reactions which express themselves in the numberless part-functions—automatic compulsions, tics, and habit-formations—characteristic of certain types of neurotic behavior. These symptoms, however, as they occur in the individual are but reflections of a phyletic condition in which partitive reactions have throughout the race been substituted for the organism's response as a whole.

In psychotic reactions such characteristic emotional projections as grandiose hallucinations, ideas of reference, delusions of persecution, and similar transpositions of feeling, present processes that are really in no way alien to the processes that dominate society at large. In order to appreciate this phyletic aspect of behavior-disorders, we have only to consider the partitive transpositions of feeling which accompany the endless word-conditioned reflexes that make up man's habitual systems of response. "Mother," "father," "home," "credit," "my house," "good," "bad," "loss," "death," "liberty," "God," "marriage," "gain," "my right," "reward," "punishment," "failure," "I," "me," "distinction," "honor," "sin"—these are but a few among the myriad word-stimuli which now condition the overt behavior of man's organism. In these social manifestations we have illusions in individuals universally accounted as normal, but these normal illusions may be seen as factors related to the expression of illusion in the insane. But such behavior-reactions and their accompanying emotional projections are reflections of the partitive systematizations which so largely govern man's every-day life and which everywhere offer a pseudo-sovereignty for the primary integrity of the organism's behavior as a total reaction-process.[14] These par-

[14] In a paper by Stuart Chase ("Parade of the Gravediggers," *Harper's Magazine,* August 1935) he refers significantly to the erratic flightiness of these glib abstractions of popular usage.

"What do we mean by capitalism? The word itself constitutes what Alfred Korzybski calls a high-order abstraction. Such abstractions are useful to the processes of human thought and action, provided the user does not forget the chain of subabstractions from which they are built up, down to the primary events in space and time. Back of 'capitalism' stand such abstractions as 'profit,' 'the free market,' 'labor,' 'credit,' 'contract,' 'property'; and back of them a series of local abstractions dealing with personal 'income,' 'savings,' 'costs'; and back of them uncounted millions of symbolic acts by millions of individuals involving marks

titive reactions are the outer resultants of phyletic modifications of function, and it is in these modifications that the real pathology lies. These internally restricted patterns and modifications characteristic of the phylum are the real impediment to the physiological balance of man's organism as a whole, and it cannot be too strongly emphasized that the individual's manifest symptoms and impediments are but the external signs of these internal alterations.

Due to such organic inadequacy in the body's internal adjustment to outer social stimuli and the consequent adaptive unfitness of the individual in his total organic response, the organism of man not infrequently finds outlet in very special and often very extravagant forms of expression. In its recourse to the symbolic or mental sphere of its activity and interchange, the organism projects its more deep-seated impairments in the form of highly complex semiopathic elaborations—in social images of dependence or fear and in consequent accentuations and deviations in the individual's feeling-reactions generally. These substitutive reactions have received special emphasis from psychopathologists as they manifest themselves in the sphere of the individual's sexual life (Freud); they have been noted in tendencies to compensatory over-assertiveness or undue aggression (Alexander), in introversions and extroversions (Jung), in somatic inhibitions and maladjustments (Schilder), in besetting episodes of guilt and self-accusation (Levy-Suhl), in complexes of inferiority and superiority (Adler), in alternating mood-variations with their wide

upon pieces of paper called checks, account books, invoices; and back of them the movement of machines and materials by human direction or effort through time, which constitutes the final reality.

"Without some conception of this chain, the word capitalism remains pure metaphysics, a creature of the brain only, and so a sort of god or demon, depending upon the point of view of the individual using it. A fighting word, full of emotional content and nothing else. 'Democracy,' 'freedom,' 'fascism' are kindred terms."

While such comments of the economist or the philosopher offer a commendable recognition of the need for reorientation in the field of man's social reactions, man's social reactions, it must be remembered, rest still upon a basis of internal modification that is partitive, extra-organic, and that can never reach and recapture man's original basis of motivation.

Of course, at the moment it is the fashion to pick on capitalism quite as though it represented a more partitive, a more externally conditioned process than other economic systems—quite as though other economic and political systems (socialism, communism, fascism and the rest) did not merit an equal berating on the same ground.

extremes of vacillation (Wertham), in notions of unreality (Janet), and in ideas of reference (Jones), in delusions of grandeur and of persecution (Ferenczi), in fanciful sensations of stress or pain in this or that arbitrarily selected part or organ as well as in various other interrelated personality-disorders as these manifestations have for years been formulated by Adolf Meyer.[15]

But experiments in the organism's reaction as a phyletic behavior-process give evidence that a primary inadequacy in the organism's systemic tone or balance, a lack of internal physiological integrity or poise within man's organism as a whole, is the real foundation upon which the individual's mental or symbolically induced discomforts have been artificially superimposed. Thus, as the result of phylopathological investigations, the manifest signs and symptoms that represent the individual's "mental" pathology are seen as quite secondarily referred factors. They are seen as the individual's misguided substitution of *images* of dissociation and of maladaptation in explanation of pathological processes which reside within the actual physiological function of the organism as a phyletic whole.

[15] Freud, Sigmund, *Hemmung, Symptom und Angst,* Leipzig, Internationaler Psychoanalytischer Verlag, 1926.

Alexander, Franz, "Psychische Hygiene und Kriminalität," *Imago,* 1931, Band XVII, pp. 145–173.

Jung, Carl G., *Über die Energetik der Seele,* Zürich, Rascher & Cie, A.-G. Verlag, 1928.

Schilder, Paul, "The Somatic Basis of the Neurosis," *The Journal of Nervous and Mental Disease,* 1929, Vol. 70, pp. 502–519.

Levy-Suhl, Max, "Das Sündigkeitsproblem in der Neurose," *Allgemeine ärztliche Zeitschrift für Psychotherapie und psychische Hygiene,* 1928, Band I, pp. 590–604.

Adler, Alfred, *Problems of Neurosis,* New York, Cosmopolitan Book Corporation, 1930.

Wertham, F. I., "A Group of Benign Chronic Psychoses," *The American Journal of Psychiatry,* 1929, Vol. 9, pp. 17–78.

Janet, Pierre, *Les Névroses,* Paris, E. Flammarion, 1909.

Jones, Ernest, *Essays in Applied Psychoanalysis,* The International Psycho-Analytical Library, London, The Hogarth Press, 1923.

Ferenczi, Sandor, *Contributions to Psycho-Analysis,* Boston, Richard G. Badger, 1916.

Meyer, Adolf, "An Attempt at Analysis of the Neurotic Constitution," *The American Journal of Psychology,* 1903, Vol. XIV, pp. 354–367.

"The Problems of Mental Reaction-types, Mental Causes and Diseases," *Psychological Bulletin,* 1908, Vol. 5, pp. 245–261.

"The Relationship of Hysteria, Psychasthenia and Dementia Praecox," *Nervous and Mental Disease Monograph Series,* 1912, No. 9, pp. 155–162.

"Constructive Formulation of Schizophrenia," *The American Journal of Psychiatry,* 1922, Vol. I, pp. 355–364.

In the field of medicine elsewhere in which the problem of diagnosis and treatment involves some local body-derangement or specific systemic condition, the physician, as we know, addresses himself to the disordered organ or tissue in question. But in disturbances affecting man's adaptation as a total reaction to the surrounding milieu, it is not seen that the disorder involved is no less an organic disorder. Indeed, from studies of the organism's total reaction there is evidence that where there exists functional or mental aberration, students of these behavior-disorders have very generally missed the fundamental pathology in these conditions because of their failure to reckon with processes which belong to and are motivated by the phylum as a whole.[16] They have failed to recognize that these obvious conditions are but the outer aspects of impaired tensions and modifications which affect the systemic balance or tone of the organism's internal response as a total phyletic process.

There are signs that the domain of medicine that has to do with the individual's disorders of adaptation will presently set aside its dependence upon purely epiphenomenal or psychic interpretations—interpretations which are wholly preceptive and which, like the word "psychic" itself ($\psi\upsilon\chi\acute{\eta}$ = air, breath or spirit), are but few removes from the spiritual stratospheres of medieval phantasy. The disordered reactions of the organism which too often rest upon purely metaphysical or psychic interpretations are really expressions of partitive, internally deflected modifications of the organism's behavior as a primary total process. Mental experiences, opinions and impressions, with the signs and signals, the outer gestures and symbols representative of man's social code, are now mistakenly regarded by us as constituting the disorder itself. But as physicians we are confronted with the task of basing our interpretation of these pathological reactions upon a more systematized, biological principle of inquiry.

The material of phylopathology can, I realize, hardly be represented adequately when lifted out of its experimental context and presented in the form of a written report. Results of experi-

[16] "It is, in fact, unlikely that neurological research will give new methods of control over human behavior." Adrian, Edgar Douglas, "The Nervous System," *Science*, 1936, Vol. 84, p. 278.

mental researches show that the phenomenon of partitive substitution with its cortical or symbolic affect-replacement is closely correlated with the problem of attention as it relates man's organism to the external environment as a total bionomic function. This partitive or symbolic substitution that has come to stand for the organism's total attention-reaction possesses medical and social significance because of its influence upon the processes of man's adaptation to the environment both as an individual and as a community, both clinically and socially. It is this broader implication of man's ecology with its concomitant physiological modifications internal to the organism that constitutes the specific interest of phylopathology.

CHAPTER IX

THE PHYSICS OF THE NEUROSES

THE central interest or impetus of an organism is its relation to its environment, including of course its relation to other organisms. This relation of the organism to its objective environment has since the beginning of time been the all-engrossing business of man. The growth of science is one with man's growing intimacy with, and closer understanding of, the objective environment.[1] Life's primary phenomena as recorded in the manifestations of stimulus and response are bionomic, ecological phenomena. With respect to man, as we have just seen, his bionomic adaptation entails a neurological conditioning of the organism. There is the total reaction and there is the partial reaction. The cerebrum and its appendages—the external senses—as they become interrelated or coördinated through the mechanism of the symbol or the appellative image constitute the neurological substrate that mediates man's partial or partitive reaction to his environment.

A great deal of confusion has arisen in the functioning of man's social processes as well as in his conception of what those processes are, and this confusion has entailed much needless impairment in our human relations. We owe undoubtedly an immeasurable debt of gratitude to the invention of the symbol and of language, but in connection with this invention there is the need also for serious retrenchment on the part of the organism because of the incalculable impediments which have been imposed upon it through this shorthand method of communication and contact. While man's progress has gained significantly through the specialization of function associated with the projective

[1] "All living is interaction between a protoplasmic organization and the energies of an appropriate environment." Herrick, C. Judson, *Fatalism or Freedom,* New York, W. W. Norton & Co., 1920, p. 31.

senses, his outlook has been correspondingly impeded through the errors in bionomic adaptation which have attended this unquestioned asset in the life of the race. Based upon erroneous subjective inferences a false principle of behavior has been established in man's relation to outer space and time or to the environmental world of solidity. So that man's bio-physical adaptation to the external environment now presents to the student of social adjustments an avenue of inquiry which would seem to offer new and valuable data in the field of human relations.

A principle of philosophy which remains with me from early scholastic memories, runs: *"Nulla actio in distans"*; no effect is producible in the absence of an intervening medium. This axiom postulates throughout the physical universe a principle of uninterrupted continuity. It presupposes that the light which reaches my eye from the farthest star does so by reason of the continuity of physical light waves extending between that celestial body and the rods and cones of my retina. The individual who sits at the receiving set of his radio and hears a Beethoven symphony does so by virtue of an intervening continuity between sound waves produced at a distant broadcasting station and the auditory terminals within the cochlea of his ear. We constantly marvel that man's ingenuity in the sphere of physics should be able to establish mediation between stimuli and receptors that are separated from one another by such wide intervals of space. But we fail to realize that, if we take account of the intervening medium between the so-called distant object and the observer of it, the "distance" is, from the point of view of action, efficiency or function, no greater than that between the tactile nerve terminals in the tip of my finger and the object with which these terminals make "direct" contact. The former phenomenon, however, is regarded as something "wonderful" and that quite "baffles understanding," while the latter is rated among the casual phenomena of daily experience. But, whether the instance is one of an immediate tactile sensation, or results from a seemingly remote visual or auditory stimulus, the subjective phenomenon of sensation or perception represents in each case a touching-off of energy in the internal world of neural response by a stimulus from the external physical universe. It is alone the continuity between a

given form of energy and its specific neural receptor that makes possible this touching-off of the appropriate neural conductor and that renders the stimulus appreciable within the organism.

As we are of course aware, the subjective functions of vision and audition—the two senses in man that are preëminently projective—are essentially physiological functions. In the function of vision, for example, the immediate physical stimulus produces an impression that consists of only an infinitesimal inverted image upon the retina. That is all. Due, however, to the neural, muscular, visceral and vasomotor continuity of function existing within the organism and binding its tissues and organs into a functionally coördinated unit, this exceedingly minute retinal impression becomes immediately correlated physiologically with latent neural energies resident within and distributed throughout the total organism. So that the orientation of the organism as a whole—its total bionomic adjustment to the object seen—involves extensive and complicated mechanisms in relation to which the response registered in the physico-chemical reaction of the retina contributes but a fractional element. The distance of the object from the observer, its height, size and depth; its weight, density and consistence, etc.—all these are also elements in the process of perception, and these factors become physiologically correlated with the visual element only through the repeated tests and controls which, exercised by the organism from the individual's earliest infancy, have been subjectively, proprioceptively established within it.

Only this correlation of general body-alterations with the specific alteration produced in the retina through visual stimulation gives to the total organism the sense of surrounding objects we know as "perception." This bio-physical integration is the basis of the organism's bionomic awareness and adaptation. But it is only through a long sustained process of trial and error that these body-correlations are empirically established within us. The repeated experience through which, for example, one attains a sense of the number of steps required to reach a particular object, or the subjectively experienced appreciation of the upward or lateral motion of the head in estimating the height or length of the object, or the necessary stretch and tension of

the hands and fingers in grasping it—not to mention the extremely delicate eye-movements that accompany these different operations—all these various and habitual stereognostic reactions within the organism gradually contribute to form its consistent and controlled relation to the size, outline and intensity of the image formed upon the retina. This correlation, then, of general bodily tensions with the specific visual (or auditory) impression is a subjective process that is established so early and so unconsciously as to have become now quite lost sight of in comparison with the more obvious factor of the externally seen object—the factor of the incoming visual stimulus reflected from the object. But it is this constantly maintained internal or proprioceptive relationship between general body-tensions and the specific sense-impression—this orientation with respect to objects outside the organism by reason of an internal orientation *within* the organism—that I have taken the liberty of calling man's subjective space-time relations.[2]

Man's objective space-relations—his perceptual world of multi-dimensional solidity—are therefore dependent for their determination upon his subjective or internal space-appreciation. This coincidence empirically established in man between the space-time relations of the outer, objective world and the space-time relations composed of the organism's internal, subjective co-ordinations constitutes the organism's total stereognostic perception. It is only the organism's total internal response, as I have said before, that orients the individual with respect to the total object he encounters or "perceives" in the external world of solidity. But in our ocular, uni-dimensional bias of interpretation we tend to restrict this process to the narrow limits of the organism's purely projective visual field.

[2] In recent psychopathological studies distortions of the sense of space and time have been discussed in relation to various personality disorders. However, the approach in these investigations is very different from that outlined here.

Fischer, F., "Raum-Zeit-Struktur und Denkstörung in der Schizophrenie," *Zeitschrift für die gesamte Neurologie und Psychiatrie,* 1930, Vol. 124, pp. 241–56.

Israel, Nathan, "The Psychopathology of Time," *The Psychological Review,* 1932, Vol. 39, pp. 486–91.

Minkowski, E., "Das Zeit- und das Raumproblem in der Psychopathologie," *Wiener klinische Wochenschrift,* 1931, Vol. 44, pp. 346–50, 380–4.

Schilder, P., "Psychopathology of Time," *The Journal of Nervous and Mental Disease,* 1936, Vol. 83, pp. 530–46.

The true estimate of the stereonomic world of objects—its dimensions, its space-relations or what we call the reality of an object—is dependent, then, upon the appropriate space-relations internal to the organism itself. It is dependent upon the correct internal sense or sensation of solidarity embodied in the organism's own correctly proportioned distribution of internal tensions and strains. Accordingly, what we call perception is really a reaction that is dependent upon an accuracy of *inference.* This inference proceeds from subjective correspondences or relations, as they occur inwardly in space and time, to objective correspondences and relations as they occur outwardly in space and time. The matter is one of exact comparative mensuration between coördinations and relations which are external or objective and coördinations and relations which are internal or subjective. The sum of these internal modifications determining the correct relations of the internal organism to the external object I referred to in Chapter Five as the organism's cotentive function. The process whereby this function is performed I called cotention. This designation will assist us in distinguishing between the functions and modifications comprehended under it and those modifications and functions which are restricted to the more specific symbolic processes of attention. The function of the organism's cotentive processes in relation to the external world, the function of the organism's attentive processes in relation to the external world, and also the function of these two systems as they are related to one another within the organism, are of extreme importance biologically. They are of importance in establishing those processes which enter into the behavior-constellation we know as the mind of man—processes which contribute to the organism's behavior-relations both in its individual and in its community expression. Further, they are important in relation both to those behavior-reactions which it is our habit socially to consider normal and to those behavior-reactions which are commonly regarded as deviate or pathological.

The faculty of recognition or symbolic attention would be flat, stale and unprofitable in the absence of the total cotentive reaction. This mere semiotic, exteroceptive reflex is as completely

devoid *per se* of interest- or feeling-involvement as the plantar or the patellar reflex. Projective perception or symbolic recognition is valid and effective only as it is related to, only as it is physiologically connected with, the stereognostic, proprioceptive or total reaction-processes. May I say again that the total reaction-process does not necessarily mean a neuromuscular reaction involving the whole of the organism in the sense of a collection of parts. It means a reaction in the sense of the organic whole,[3] or a reaction to which the organism is open in its primary motivation as a functioning unit. The special symbolic reaction, on the contrary, is definitely restricted to a specific part-function or territory as it contributes to the sum composing the organism as a presumable collective whole.[4]

The organism's tension *toward* an object or condition outside itself (*ad*-tension=attention) is very different from the tension the organism experiences in respect to a condition or phenomenon that takes place *within* itself (*cum*- or co-tension=cotention). A few examples will illustrate the marked differentiation between a purely attentive reaction, and reactions which are bound up with cotentive processes. My sense or perception of a book, a bell or a ball, for instance, is an act of awareness or attention that entails a very different form or pattern of neuromuscular tensions from that occurring in my sense or awareness of hunger or fatigue, let us say, or in the organism's general feeling of well-being. The object or incident outside of me to which I attend entails normally the specific set of tensions associated with the process of visual accommodation. The same is true, of course, in regard to the tensions and alterations produced in the ear due to an external auditory stimulus. On the other hand, in the case of the total internal processes to which I attend or of which

[3] Cf. pages 116, 162–163, 176–178.

[4] The average reader will, of course, protest against the mere mention of the term "collective whole" when it refers to the organism. But the average reader is quite unaware that he himself and the rest of us are definitely in the habit of thinking and of acting as if both the social organism and the organism of the individual comprised collectively an additive sum of parts. Unfortunately man's behavior does not ordinarily rest upon the organism's "physiological" sense of its totality as a race. In our partitive segmenting of this and that private affect, wish or "function," we do not sense the indissoluble unity and integrity of what we call "organism" or "organization" in the sense of an internally coördinated primacy of function, whether individual or social.

I become aware, the systemic tensions involved are of a very different nature. Such tensions are not localizable in any circumscribed pattern of muscular alteration such as is the case with attention having to do with the projective senses. I may give my symbolic attention to a thermometer or a barometer and in this way I may know or become projectively aware of the heat or the pressure of the atmosphere. But I may also know or be aware of how hot a day it is and how great is the humidity by virtue of the cotentive processes within my organism—processes resulting from my vasomotor reaction to or registration within myself of these atmospheric conditions existing outside of me. There are, of course, very many conditions existing outside the organism of which the organism becomes apprised only through its cotentive function and of which it could not become aware through the visual or auditory senses and the employment of the symbol. The sense of muscular coördination in the legs occurring in walking, and the empathic effect of music or of poetry afford instances of reactions which could not possibly be produced through a process of mere cerebral or projective attention. Perhaps the special sense which is closest to the organism's total cotentive reaction is the sense of smell as employed in its primary total function, but not as it has subsequently become linked with the projicient function of the symbolic or appellative system. Among the cotentive responses are the organism's preconscious memories, the elemental smell of the earth, the reactions of nutrition and sex, the sense of mutual fellowship and the common appeal of interest and of purpose as there daily recurs the waking period in the organism's cycle of activities.

This bio-physical distinction between the cotentive and the attentive reactions of the organism is of vital importance to the student of human pathology because of its service in opening a clear course to the problem of those behavior-maladjustments commonly regarded as mental disorders. By reason of the importance of this distinction, it is the more urgent that we attain a clearly coördinated and systematized recognition of it. Through the physiological juxtaposition and coalescence of these two organic processes within the observer himself, he is necessarily predisposed to an insidious confusion in his efforts to estimate

the distinction between these two basic bionomic functions. Because of the absence of a clear demarcation between these two provinces of the organism's behavior, students have very generally failed to discriminate between those processes which determine the individual's objective judgments and those which determine his subjective judgments. The result is that in the sphere of those behavior-disorders of man we know in their symptomatic expression as "mental"—the sphere that must ultimately become the bionomic province of man's scientific self-inquiry—there exists a degree of partial [5] or partitive inferences, of prejudice, or *pre*-judgment, of hasty conclusions and illogic, that is as yet quite unsuspected.

To cite a common enough instance: I may see quite objectively that a man is dishonest; I may even observe him in the act of stealing. This objective observation of the dishonest act is recorded through a symbolic mechanism occurring within a restricted segment of my organism and is the result of organic processes within me which are perfectly constant. A man taking the property of another without the latter's knowledge or consent presents a situation of which my attention yields a wholly consistent report—as consistent as my observation of a book or a ball. This instance, however, is one of projective observation pure and simple. It is a reaction of mere recognition.

But now suppose my country is at war and that along with others in the forward trenches I see a comrade creeping forward under cover of darkness to the enemy's line in order to steal plans of their movements and fortifications. The outer report of my senses remains still completely faithful to the objective circumstance or event. I am still witness to a misappropriation of property without another's knowledge or consent. But in this instance definite partitive reactions intervene. The observation is accompanied by affect. A sense of gain, of satisfaction, of encouragement, making for a generally pleasurable tone, now enters into the situation and arouses within me an entirely different set of reaction-tensions.

Now let us consider a third aspect of this situation. For I

[5] *Partial* (or partiality) has the significance also of prejudice or bias, as "to be partial" toward some person, cause or view-point.

think we shall see that within this same set of partitive reaction-tensions in which an observation has been stimulated under objectively identical conditions—namely, by an act of stealing—there may result a reaction-tone that is diametrically opposite to the pleasurable reaction-tone just cited. The reaction may be accompanied by definitely dissatisfying, displeasurable sensations. For, in this instance, we will say that the property stolen is *my* property. Let us say I discover that a trusted employee, a man upon whom I have long depended, has been secretly embezzling from me sums of money which for years I have labored diligently to earn for the maintenance of myself and my family. Again property is stolen, but in this case it is stolen from *me*. Note that objectively the circumstance is unchanged. The outer symbolic observation remains substantially the same. I still see that property is taken from a man without his knowledge or consent. Nevertheless in this instance, in which the property stolen is mine, the partitive coloring of the observation becomes wholly different. All manner of reactions in the form of negative affects now interpose themselves to modify or alter the objective observation. In the first instance I look upon the act of stealing with complete indifference. In the second I actually rejoice in an act of stealing. And in the third I find myself deeply aggrieved by it. But always it was an act of stealing toward which my attention was directed. In the strict meaning of the organism's immediate sense-perception always the objective circumstance remained the same. In each case the reaction remained the consistent observation of an act of stealing. But despite this consistency in the organism's objective response to objective conditions, my subjective reaction varied markedly in each case.

It is where there is this modification and alteration in the objective observation due to a subjective inconsistency—where internally I react entirely differently in response to an identical outer event—that processes quite apart from my *at*tentive relation to the actual event are brought into play and arbitrarily color the impression produced. Accordingly there are set up within me quite unconsciously reactions that are wholly autocratic and that quite exclude an unbiased attitude toward the object or circumstance attended to or observed.

Because of the variously colored aspects in which it is possible to view these three objectively identical incidents, we may gain some idea of the degree in which we fail to recognize the dependability of man's perceptual inferences with respect to the objective universe. We know theoretically the consistency and dependability of the physiological structures upon which these inferences rest. We know that the consistency or correspondence in the objects of our inferential universe, as they are perceived by the various individuals of the species, is coincident with the physiological consistency or agreement which runs through and knits together into a common structural homogeneity the exteroceptive senses of man as a race or phylum. But man's universe is apperceived [6] stereognostically as well as visually, cotentively as well as attentively. For common also to the race or species of man are those internal and instinctive interreactions expressive of the organism as a whole. It is not recognized, however, that man's inferential universe is likewise dependent upon these reactions as they characterize commonly the elements or individuals composing the species *inter se*. It is not recognized that the organism's internal feeling-receptors as well as its exteroceptors constitute a common substrate in man's bionomic adaptation, and that these internal foundations likewise make for a consistency or homogeneity of sensation and feeling throughout the race as a whole. Overtly or tacitly science makes a point of the consistent physiological reaction of the projective senses throughout the species. For it assumes an underlying agreement in the specific quality of the impressions seen, heard or otherwise perceived by us as a condition of the dependable and controlled employment of these senses. This is the meaning of consensual objective observation. Yet in omitting recognition of the equal consistency of the primary cotentive processes we lose sight of the very basis of clear, unbiased scientific observation.

We have earlier called attention to the circumstance that in the lower animals, as originally in man before the development within him of inter-cortical symbols or of language, a stimulus to the projective senses elicits a response which, whether great or small, reacts at least potentially upon the organism as a whole.

[6] See note 10, page 114.

This type of reaction involves what Coghill calls a response of the total action-pattern. That is, it involves a general, homogeneous type of response. If there occurred a "partial" or "reflex" type of response, such response was still only a specialization of the total action-pattern.[7] With the development in man, however, of the symbol and his inter-cortical systematization and elaboration of reflexes in the form of language, there was established an increasingly restricted or specialized zone of stimulus and response. But this system of reactions, it must be emphasized, was still inter-individual and phyletic. So that while belonging to the non-total, non-instinctive "partial action pattern," it is noteworthy that this inter-cortical systematization of reactions involves a continuity and a homogeneity of function that extends throughout the phylum. However, this symbolic or inter-cortical system with its continuity and consistency has come to assume a quite arbitrary independence throughout man's attentive, mental life, and now stands in sharp contrast to the primal sovereignty that characterizes the cotentive life of the organism as a whole. This assumed independence in tensional patterns occurring within a specific segment of man's organism has entailed biologically a quite irreconcilable antagonism between the partial pattern of response embodied in this cerebral specialization of man and the pattern of response belonging originally to the species as a total organism. As I see this problem in relation to the organism of man from within, the clue that seems to offer opportunity for the clearest analysis of this antagonism lies in a study of man's attitude in respect to what may be called his subjective space-relations.

We have considered the kinesthetic or stereognostic inferences that are based upon the organism's spontaneous experimentation from early childhood. We have seen how these inferences fashion man's bionomic premises in his assessment of objective space-relations. We have further seen how organisms gradually learn to project or to infer, from impressions received through their projective senses, the existence and the nature of the objects

[7] "The mechanism of the total pattern must be regarded as participating in every local reflex." Coghill, George E., "The Structural Basis of the Integration of Behavior," *Proceedings of the National Academy of Sciences,* 1930, Vol. 16, pp. 637–643.

thus perceived in common. And we have also noted how innocent, how innocuous this common inferential reaction in man is because of the consistency among us of both our outer and our internal inferences—inferences that are based upon the homogeneity, both intra- and inter-individually, of the structures involved in response to stimulation. For in this respect all individuals normally enjoy a functional accord that is equal and common among them.

I should like now to explain more fully what I mean by man's subjective space-time relations and by those aberrations or inadvertences of feeling which are due to his false spatial inferences in the subjective, internal field of his experience. I should like to consider how man now invests his "seeing" or his "hearing" —purely organic physico-chemical phenomena involving their own specific tensional alterations—with faculties or attributes which are by no means intrinsic to the function of these special senses.

But on turning to man's maladjustments of inference in respect to the organism's subjective relations in space and time, we find that this functional inadvertence is extremely difficult to formulate. This, however, is inevitable. Perhaps, after all, it is quite impossible to describe in language, or through the sphere of man's exteroceptive means of communication, the nature of reactions or processes that pertain to man's total, proprioceptive life—impossible, at least, in the absence of one's relinquishment of his own too rigid adherence to mere symbolic, exteroceptive habits of perception. Perhaps one can do no more than intimate from analogies what the nature of this proprioceptive sphere of man's interchange constellates. At least, though, these analogies should be as little intellectual, as little symbolic or "cerebral" as possible. If it is true, however, that organic or subjective continuities of intercommunication have become projective or mental through the misapplication of inferences habitual to the symbol or the inter-cortical sphere of man's exchange, our first task is to consider what these primary racial or inter-individual continuities are.

As in other animal forms, so between the human mother and her offspring there exist certain continuities of feeling and in-

stinct.[8] These continuities are intrinsic and organic. They are bonds fashioned of a common physiology and possess a common basis of organic tension and alteration. But the mother, through her mental, symbolic adaptation, gradually interrupts this natural menstruum of sympathy or coördination by bidding the child *look at* himself or at her, that is, separate himself symbolically in turn from her and from himself, and regulate his external conduct in accordance. In doing this the mother artificially interferes with an interoceptive space-time relation within the organism of the child that is basic and inviolable throughout the species. So that setting out with this early defective pattern in his human relations the individual inevitably muddles his subjective interpretation of the intervening space between himself and those to whom he stands related. On the one hand, this space is bridged organically, interoceptively, through a primary system of stimulus-response reactions—the organism's proprioceptive reactions. On the other hand, this space is bridged symbolically, mentally, through another and quite secondary system of stimulus-response reactions, namely, through the exteroceptors constituted chiefly of the visual and auditory organs. The sense-reports derived through these two avenues of communication, the exteroceptive and the interoceptive, should normally complement one another. But there is lacking this organic correlation. Unconsciously the organism constantly seeks to validate its proprioceptive impressions with exteroceptive inferences. Partitive affect-images are interposed with a resulting physiological inconsistency and confusion. The organism's subjective space-tensions (its kinesthetic sensations) now become seriously distorted and even perverted in their primary bio-physical intent.

The result is an interpretive nuance that is wholly gratuitous, "moral" or "emotional," and to this nuance we give the fullest social credence when, in point of fact, the organism is really subject to an essential space-time illusion. This inadvertence marks a unique crisis in the bionomic relation of man to his external world. In consequence an individual in all good faith "sees," mentally apprehends, not a person but what is to him, mentally, a "nice" person or a "not nice" person. He believes that

[8] Cf. pages 74–76.

there is the person to whom he should speak with harshness or sarcasm, while there is another person toward whom a gentle, affectionate manner appears to him appropriate. Or in both instances it may be one and the same person and to this person he will speak in tones of benevolence to-day and bitterness to-morrow, because this is the way he "sees" the same person on different days of the week. Thus he selects one person and discriminates against another, when subjectively, organically, both are equally continuous with himself. And he does this just as though he were dealing with the extraneous, appellatively itemized objects of his external, visual world. And so, choosing his favorites and discarding others, the individual deals with people of his own species as though they were projective, discretely symbolizable items. He confuses intrinsic feeling with the objective material of his exteroceptive senses and in this way loses completely what I have called his subjective space-sense—his proprioceptive continuity with his own total organism as with the total organisms of his kind.

Due to this bionomic misapprehension internally man misses the full dimensional function of himself as a total organism. Accordingly, in the midst of his confusion he falsely assorts his feelings upon a lifeless, numerical basis, as it were, mixes them with images of himself and others, and constantly *talks about* this or that individual with affect-inferences in respect to them which are quite arbitrary, esoteric and functionally uninclusive. Confusing his subjective and his objective space-dimensions, the individual places himself "mentally" in a position opposite himself, and in his exteroceptive capacity he at one time calls himself adequate, good, representative, and feels correspondingly pleased and elated; while at another time, through the same symbolic displacement of function, he calls himself unworthy, bad, unpresentable, and is correspondingly displeased or depressed. Under this misdirection of feeling he may in the extreme case incur, on the one hand, a marked psychopathic depression and, on the other, a no less marked and pathological elation.[9] This same dichotomous tendency of judgment, based upon a confusion in his subjective space-intervals, he likewise extends to others.

[9] Cf. pages 183–184 and 192–193.

Others are "nice" or "good" to-day; to-morrow they are "not nice," "not good." But, throughout, his judgments are based upon his arbitrary itemization and isolation of the single individual as object, regardless of the subjective, stereognostic continuity that subsists among the individuals of the race or species. The extreme case may lead to an intense over-evaluation of another person with corresponding narcistic or ego-sexual references (transference) or, in its opposite tendency of appraisal, to a repulsion of feeling with consequent persecutory references and even to homicidal (or suicidal) trends.

Just as we form pictures of the objective world and fill in their meaning with circumstantial inferences, so we have through an inadvertence acquired a facility for forming artificial pictures of one another socially—of "seeing" motives and intentions in others which, however "true" they may be, mark an internal reaction-tendency in the observer that is wholly without organic foundation. For in this process we are filling in our perceptual interpretations with supplementary inferences that are based upon our own partitive affects.[10] It is these supplementary inferences that I have called "social images"[11]—the sophisticated and artificially tutored feelings or empathies which now adhere to the pictures we form "mentally" of one another. Through the evidence of recent years it has gradually been borne in upon me that the physiology of the feeling-misapprehension underlying our social images is to be traced to some primary disturbance in the sphere of those tensions and alterations in man which regulate his internal, stereognostic space-relations.

Perhaps I may put it in another way: Awareness as we now regard it—consciousness of an object before me—is conditioned by a secondary reaction. This secondary reaction man calls mental. By virtue of it the image which an object produces upon my retina is again projected by me into the precise configuration of outer space occupied by the object. This we call seeing or apprehending an object. This mechanism of projicient objectivation is dependent upon the individual's axial focus upon the object.

[10] Cf. pages 187–188.
[11] See note 6, page 28.

Of course, in animals, as also in the early development of man, the eye employs this visual axis in focusing upon the external object, but this axial apprehension of the object is accompanied by the organism's neuromuscular, proprioceptive response as a whole. There existed in man at first no confusion between the organism's partitive and its total pattern of action; the partitive or symbolic system had not as yet assumed overt supremacy over man's total reaction-pattern and thus become an independent partitive-affective system. But through man's innovation of an inter-cortical code or nomenclature—through his habit of mentally itemizing and isolating the object by means of the selective sign or symbol he substitutes for it—a secondary axial or projicient focus (symbolic attention) tends to induce a mental concept that is also isolated or axial in contrast to the organism's rounded stereognostic apprehension of the object as a whole. We not only employ this mechanism in relation to objects, but it has even come about that this lineal, axial concept now characterizes everywhere our attitude toward one another. We go about peering at each other through mental telescopes as it were. Our approach to each other has come to limit itself almost exclusively to these conceptual funnels we have fancifully fashioned and which we now unconsciously direct toward one another as a means of social communication.

In this way the organism's stereognostic reaction concomitant to its visual impression of an object or of another organism has now to a large extent been interrupted. There occurs the insistent inter-individual or social substitution of the symbol or name of the object for the object itself and the consequent obtrusion of an emphasis upon the merely axial concept or mental focus within the special visual and auditory fields. Due to this biological interpolation of the axial concept, the visual (or auditory) impression, which was originally coördinated with the organism's general proprioceptive response, is now restricted to a quite isolated perceptual response having its seat within the cortical areas associated with the special projective senses. By virtue of this symbolic or cerebral segment, the organism now performs a function that stands in sharp contrast to and tends to

exclude the organism's primary stereognostic reactions.[12] If we are to distinguish between total sensation and axial perception, between stereognostic, internal feeling and the projective perception of an object as externally symbolized—in short, between the organism's cotentive and its attentive processes—it is required that the function of this axial system as a social medium of bionomic attention and contact be clearly demarcated from the organism's primary, cotentive sensations and impressions. For it is the confusion between these two spheres of reaction which has resulted in the attempt to attach internal feelings to symbolically projected impressions and thus caused the organism's total feeling to be distorted into axial or partitive affects.

I must emphasize again that in the interpretation of the present thesis the introduction of this element of affect into the axial concept or into the function of the symbolic segment constitutes the central factor in the causation of mental disorders as well as of their social counterpart in the form of political and economic conflict and dissension. It is extremely important, therefore, to recognize the phylogenetic interpolation of this element of affect into the organism's mental focus or axis of reference and its development coincident with man's faculty of symbolic perception. For this newly interpolated axis of affect-reference has come to function unconsciously and retroactively within the socially constellated phase of man's bionomic adaptation throughout.

Before the invention of language there existed, of course, for man (or his precursor) the same outer world of objects, and there existed also his original relation to them perceptually. Man's bionomic position in respect to the objects about him had not become dependent upon an inter-cortical nomenclature gradually established empirically among the elements or individuals of the race. His adaptation to the objects of the external world had not become limited to a purely axial or projicient objectivation of them. In other words, the images received through the external senses were not recorded merely mentally or appellatively by the cerebrum or forebrain through an inter-individually agreed system of vocal signs or symbols, but these images were reacted to by the organism in its total function. That is, man's adapta-

[12] Cf. pages 113–114.

tion was regulated in accordance with his systemic or integral response to the surrounding world.[13]

The introduction of symbols, then, has caused a very marked alteration in man's bio-physical adaptation. A new element has been introduced into his relationship not only to the surrounding world of objects but also to the individuals or elements composing his own species. This new element consists of the interpolation of an affective axis of reference coincident with the introduction of the partitive type of attention—a type of attention that now constitutes man's dominant medium of communication throughout the species. Experimentation with individual reactions observable in groups or communities gives indication of the organism's lack of an adequate assimilation of this new element in the course of its phylogenetic development. It is this unassimilated element that lies at the bottom of the discord and conflict that characterize so large a part of man's reactions, both individual and social.

Looking more closely at this bio-physical innovation brought about by a method of contact and communication with the outside world that rests upon the organism's projicient or axial focus, we find there is the tendency to project or to throw outside or in front of us, as it were, internal reactions which are essentially systemic or integral—reactions which cannot possibly be projected from the organism as is the case with a lineal

[13] The experimental findings of other investigators have indicated the tendency of the visual apparatus to take over functions originally performed by more widely distributed sensory receptors, for example, the tactual receptors, and to do so to the marked detriment in efficiency of the function in question. Thus Renshaw found that while children were superior to adults in tactual localization of stimuli, adults proved superior when a purely visual method of localizing was employed. In working with blind subjects, he found not only that blind adults were superior to seeing adults in localizing but that they were superior to blind children. Renshaw concludes that whereas children depend chiefly upon tactual and kinesthetic signals for localizing impressions upon the skin, adults predominantly depend upon vision as the "distance-receptor substitute" for localizing discriminations. He holds that since the superiority of the blind adult over the blind child is to be associated with the increased discrimination which comes from more extended practice, the inferiority of the seeing adult to the seeing child in respect to this function must necessarily be due to the "shift in method of localization" which comes with "distance receptor dominance," *i.e.*, to the undue dominance of visual functions in tactual and kinesthetic fields of response. (Renshaw, Samuel *et al*, "Tactual Localization in Blind and Seeing Adults and Children." Chapter from *Readings in Experimental Psychology*, edited by W. L. Valentine, New York, Harper & Bros, 1931, pp. 399–405.)

or axial perception of an object or situation that is nominally or symbolically perceived. Evidence is afforded that the whole category of feeling-reactions artificially transposed into affective or conative responses is quite excluded mechanically from being actually shifted physiologically to an axial or projicient channel of response. But throughout normal communities of men there is universally prevalent the quite illusory practice of treating such affective elements as though they could operate along these projicient, symbolic or inter-axial paths.

This illusory mechanism is the meaning of the affect-anomaly I enact empathically when I "see" a person as other than myself in the sense of his being organically discontinuous from and opposite to me. It is this inept racial habit that is answerable for the organic illusion of the "transference," as it is answerable for its "conscious" recall in systems of psychotherapy designed to bring about a patient's social readjustment. The practical result of this affect-habit is one that is seriously subversive of the individual's harmonious activity, as it is subversive of the inter-activity of individuals composing the species as a whole. For through this racial inadvertence of function there has arisen within the species of man an organically anomalous situation. The anomaly consists in this: Integral cotentive reactions—reactions undifferentiated by attentive, partitive processes—have acquired a "mental" or symbolic interpretation or way of "seeming," and now tend to be shunted into neural paths adequate only to the projicient or symbolic axis of reference and interchange. These integral reactions are thus interpreted as mental or symbolic because they now appear to belong to the system of man's inter-cortical ciphers and codes of intercommunication.

Due to the predominant occupation of man with symbols or mentally projected images—due to his reflex habit of touching-off this projicient mechanism of objectivation in response to incoming stimuli—the integral perceptions and sensations of the organism (the sphere of man's primary feeling as a total function) tend also to follow this biologically new path of response. So that just as I tend to name and thus project mentally my retinal impression of the outer object or circumstance before me, in the same way I tend also merely to *name,* or to project men-

tally, feelings that are inherent to my organism as functionally integral processes. In other words, just as I quite correctly project the sensation or response constituted of the symbolic image or impression produced within the cerebral segment, so, through an habitual confusion existing within my organism, I now mistakenly attempt to project impressions and responses that are systemic and integral quite as though these two wholly different reaction-processes—the symbolic and the integral—were transmissible through an identical neural path, namely, through the retina and the cortical centres associated with it!

Thus I "see," or believe I "see," a face as fitting to be kissed or punched as the case may be. I see an object or person as worthy to be owned or not to be owned, and the merit or demerit assigned in either instance I ascribe to the object or condition which I "see." I do not deal with my feeling-reaction as something within my own organism that has been artificially projected upon an object or person, but I hold the person or object answerable for my affective attitude of choice or rejection and deal with my affect as though it were an actually projected condition of feeling existing outside myself.[14] This is why an objectively stable incident consisting of my quite simple observation of an act of stealing or misappropriation may take on a highly affective coloring. It explains how this coloring may in turn assume different hues and intensities according to the varying affects which may chance to arise. These may be positive or negative, pleasurable or displeasurable, approving or disapproving, but all show an absence of any objective connection with the consistently observed object or process before me. Clinging tenaciously in this way to the symbolically projected concept, the most irrelevant associations and their concomitant affect-inferences may combine to distort at will what would be a perfectly simple objective circumstance were there the simple disposition within the observer to view it objectively. Man's social or inter-individual relationships may thus be compared to the artificial relationship incited between two persons by the ruse of an artful ventriloquist. Through his dexterity each of the two is made to believe that the voice he hears comes from the other individual, and each is

[14] See note 14, page 55.

accordingly disposed to a friendly or a hostile attitude toward the other on the strength of an entirely hallucinatory projection externally instigated in them both.

It is commonly accepted that within certain states of suspended or undirected awareness—in conditions of sleep, in the dissociations of the psychoneurotic, in the delusions of paranoia and related disorders, as well as in the flights of the poet, in the transports of the religious fanatic and even in the quite customary reveries of the normal individual—the reins of control too often rest upon the neck of idle phantasy. So that in these and kindred states phantasy may assert its freedom and roam at will. But in the rigid, cubic world of tri-dimensional solidity phantasy experiences a natural check to its unrestricted flights. The hard and fast object arrests it through the sheer impact of its actuality. In this challenge we are brought rudely up against the organic etymology of the outer "object" or "objection." And so, in the consensual recognition of the object or objection on the part of the practical community ($\pi\rho\acute{\alpha}\sigma\sigma\epsilon\iota\nu$ = to do), the individual's logical safeguards against the course of phantasy and of madness are commonly to be found in his recourse to the more effector type of reaction. But now if the members of the general community with their normal proclivity to motor reactions arrive at a mental agreement that a thing shall *look* or *appear* as one thing the while it *is* another, that it shall be unanimously dealt with as an appearance or symbol the while it is an object, we have as a social community subscribed to a substitutive process which is closely related in its mechanism to the production of dissociation in the individual psychoneurotic. In other words, if, in effect, the community agrees as a unit that a thing or object possesses only a nominal, semiotic, appellative existence, when, in truth, it is related to the organism in a multi-dimensional relation of space and time, then as individuals and as a people we are faced with a definitely fallacious innovation in our bionomic development. We are faced with a biological interpolation of which we need to take thoughtful account because of the deep significance of this biological substitution in the social adjustment of man's phyletic organism as a whole. For, if through this organic innovation we are sacrificing the control of reactions which

are total and stereonomic—reactions which are practically appreciable in correspondingly actual stereonomic terms—we are faced with a social or community mechanism which has its definite kinship with those disarticulations in tensional patterns and reactions that underlie the aberrations of the insane.

Due, then, to the vicissitudes in man's bionomic evolution, an anomalous situation has developed. The organism still apprehends an object stereognostically, or as a solid-dimensional experience (stereognostic = στερεός, solid, and γιγνώσκω, appreciable), but at the same time the object is by common consent regarded as possessing only a mental or symbolic actuality. The object is regarded as having an actuality that consists in a mere name, word or symbol and that is *not* appreciable by the organism as a solid, tri-dimensional object occupying a relation to it in space and time. Inevitably, then, the phenomenon that is truly a substantial thing or object appreciable through the organism's total sensory and effector functions becomes, by virtue of this transposition, a mere intangible image, a mere sensory impression, an arbitrary improvisation of the "mind." In short, in the artificial deflection of the organism's total stereognostic reaction, the object or outer phenomenon takes on, *unrecognized,* the quality of a phantasy.

Apparently what saves the day for us as an organic community or phylum is the circumstance that the restricted behavioral reaction which produces in us the sensory impression or symbol also entails a motor response within the organism, however fragmentary in its obvious expression. In the movements of the muscles of the larynx or in other restricted reactions associated with the mechanism of symbol-production the organism preserves at least to this extent an appreciable neuromuscular link with the world of outer actuality. However, as we have seen, this restricted behavior-reaction employed in lieu of the organism's primary total response results subjectively, "consciously," in the mere sensory sign or signal. Its employment in our inter-individual exchange means for the organism the substitution socially of a mere charade or semiotic enactment of objectivity in place of the primary kinesthetic and stereognostic response that is the organism's original bionomic reaction to the object.

Under these circumstances it is quite to be understood how an appearance, phenomenon or so-called object may be subjectively modified at will, and how ultimately the entire personality may become disoriented and finally completely disorganized. Unless the investigations of my associates and myself in the field of man's bionomic reactions are wholly misguided, there is to be traced in this confusion between the organism's empathic, stereognostic system of reactions and its symbolic system of reactions the fundamental causation of neurotic and insane processes. Our obvious suspicions, our obsessive attractions and repulsions, our "love" and "hate" phantasies, the visions "seen," the voices "heard," the "meaning" intended, the lost interest, the wavering attention, the frustrated will, the social withdrawal or sense of insecurity, and the thousand similar obstacles to the organism's primary feeling—all these attest to a basic discord within the organism's neuromuscular processes as these processes are perceptible within the normal community as well as in the personality of the deviate individual.

It is a commonplace that within the normal community an object may assume wholly arbitrary affect-colorings that vary according to the accidental affective state in which the individual may momentarily find himself. He may wish to apply varying degrees of reward or punishment to the person whose act he is presumably observing quite objectively; that is, he may wish, on the basis of his affective bias, to "make the punishment fit the crime," the punishment (or the reward) corresponding to his own interposed affect. This inadvertence, incidentally, is the essence of legislation. In some form or other, beginning with the nursery and ending with the highest judicial tribunal, legislation is man's chief preoccupation. It is the purpose of legislation "to do something about it," but in this very "doing" there is disguised the element of phantasy that underlies and prompts the legislative act. In the procedure of psychiatry there is expressed also unwittingly a species of legislation. For psychiatry posits a rule of behavior or a condition of normality to which a patient should be made to conform. When we come to examine it, it is extraordinary what extravagances of phantasy are countenanced and encouraged by us as a community under the legislative obsession of "doing."

There is no recourse too extravagant for the phantasy of man, provided only the phantasy express itself under the guise of our widely agreed motoral images and reactions. This apotheosis of the motoral image is expressed in such familiar colloquialisms as "up and *doing,*" "How do you *do?*", "Is there anything *doing?*", "What on earth shall we *do?*", "That's the thing to *do*"; and not infrequently it runs: "That's the fellow to *do.*" For by common consent the element of *doing* is somehow warranted to take the curse off the element of phantasy coincident with the doing. In this way social activation and enterprise tend to disguise whatever there is of phantasy and dissociation prompting and motivating the enterprise. Let enough people *do,* no matter how stupid what they do may be, let them carry out in tangible gesture and motion the most unproductive, extravagant and even destructive procedure, and it will gain the community's seal of approval and endorsement as a practical programme of action. This benighted motoral warrant, existing in man's completely unconscious and biologically untenable habits and customs, alone gives sanction to the phantasies which exist socially upon every hand but which we see only in their obvious sensory form in the isolated phantasies of the individual insane.

For a very long time man kept his head despite this biologically radical innovation in his total bionomic adjustment to the world of outer surroundings. He was able to do so through certain compensative adaptations or "corrections" instinctively improvised by him. But with his increasingly complex development socially, with man's invention of actual objects or phenomena in the form of monetary symbols of exchange, or with his invention of machines equipped to act in substitution for his own physiological function as a stereonomic organism, man's organic discord has apparently become too acute.[15] The sheer mechanical involve-

[15] "A further problem faces us, born it seems to me of the wealth, abundance, and transformation of man's life from one of bodily labor to that of command over machinery.". . . For example, "Diabetes [among other metabolic disturbances] rises with wealth, with command of mechanical power and convenience, with each advance to what some will hail as a bodily millennium, when no one sweats for his livelihood, no one walks to work, and recreation is achieved by exercise only of the little muscles of the eye and ear and fingers." Emerson, Haven, "Public Health Awaits Social Courage," *American Journal of Public Health,* 1934, Vol. 24, pp. 1005–1022.

ments of man's neurosis due to its socially wider symbolization and distribution technologically are bringing its manifestations to a practical impasse.[16] In the physiological contradiction and inconsistency which man's discord now entails, the very systems of his civilization, with their symbolic embodiment in the form of invention and machinery, are breaking down before his very eyes—before his very senses.[17] Man's systems are breaking down before those same senses in whose symbolic, partitive miscarriage his difficulty of adjustment first arose, and man's senses, as he is at last to his consternation being brought to learn, can *do* nothing about it. Man cannot circumvent invention with more invention. He is confronted with a problem that is internal to himself—to his total proprioceptive reactions as totally appreciable by him. Once more we find that man's problem is a physiological problem involving the processes of his organism as a multidimensional whole. Accordingly, there is required a new method of procedure calling for a newly organized instrument of observation if we are to meet the social and economic exigencies by which we now find ourselves suddenly challenged.

[16] "Our knowledge of men and of social institutions stands to-day where our knowledge of material nature stood two centuries back. We may be compelled to retrace our steps for a time to a simpler organization of society. We may, for a time, need to forego some of the material benefits which science and technology are amply able to provide. If we are to enjoy these gains with any security, it is urgent beyond all else that our knowledge of the human and social sciences be brought abreast of our material development." Wickenden, William E., "Science and Every-day Philosophy," *Science,* 1933, Vol. 78, pp. 467–471.

[17] A clever verbal picture of man's present social dilemma is given by Theodor Lessing in his article, "Speech of a Fool," which appeared in *The Living Age* (1933, Vol. 345, pp. 205–208): "Thanks to culture, the collapse of culture approaches. Thanks to sheer cleverness, we are approaching madness. Our very achievements and progress, the whole world of things that we have created, especially our artificial products, are now outgrowing us so rapidly that we are constantly forced to make new inventions in order to protect ourselves from the consequences of previous inventions.

"Today we invent the radio, which carries the voice of any fool to everybody in the world. To-morrow we must therefore invent a radio-silencer to prevent that voice from being heard. Today we invent an odorless, invisible, and instantaneously fatal poison gas, and to-morrow we must invent a new mask that will protect us from this gas. We invent television, which enables the same person to appear as a phantom in many different places at once, and therefore to-morrow we must discover some apparatus to prevent these visions from intruding into the private lives of us all. We invent a self-steering airplane that drops bombs or bacteria, and to-morrow we must discover electric waves to prevent that self-steering machine from functioning. . . . We always dig the material for our houses from the soil on which we build them."

For a laboratory examination of normal behavior-reactions gives evidence of their harmful influence upon the race as they now occur in response to man's symbolic adaptation as a social organism. Laboratory study gives evidence of a definite conflict between the specific reactions that are associated with the production of the symbol and those physiological reactions of the total organism in its response to stimuli produced by actual objects. It shows that the symptomatology presented in man's tendency to dissociation and phantasy is traceable to these underlying physiological discrepancies of function. Through the investigation of the interreactions of individuals observable in social groups there is evidence that the incidence of neurosis, crime or other markedly deviate expressions as they occur in the individual here and there is but the extreme instance of a flight toward dissociation and phantasy as we find these dissociative tendencies existing in collective social form. This semiotic replacement of the organism's stereognostic relation to reality is a replacement that rests upon a physiological deviation in adaptation. This collective abrogation on the part of the social organism of its primary space-time objectivity embodies a racial mechanism whose understanding and modification socially are indispensable to an understanding and modification of those processes we recognize in the psychoneurosis or in the antisocial deviation of the single individual.

We have seen that through the merciful necessities of biophysical circumstance—through the circumstance of man's primary relation as a total organism to the total object—man's phantasy is forcibly harnessed to outer, objective actuality. But there exists a circumstance of still greater beneficence to the organism in its external orientation and adjustment. While it is obviously true that by virtue of the objective actuality of the tangible things about him the motoral functions of man are constantly safeguarded against an imbalance of behavior due to the extravagant flights of his uncontrolled sensorial or symbolic function, these salutary impediments for which we have to thank the total organism are purely static, purely passive. But in man's practical daily affairs—in the physiological function of his life as a total stereognostic process—conditions constantly arise which require that he deal actively with them. The log that has fallen

across my path, setting an obstacle to my course, is an object to which my total motor system is stimulated to respond with objective measures involving definite physical intervention on my part, even though these measures are to-day largely augmented by my mental or symbolic reasoning. But this is a very different condition from that in which I sit at home by my fireside, reading or dreaming of the exploits of some early pioneer. Pondering his able woodsmanship and the dangers he daily challenged, I might easily construct mentally—that is, out of my partitive, symbolic system—a wholly symbolic, fanciful hero of him. Through the function of this image-system I might readily identify myself sensorially, fancifully with him, as in childhood I was encouraged to identify myself with the unprecedented virtues of my father and his unimpeachable forebears. In this divorcement of my organism from the hard and fast solidity of the objective world—the actual world I must be up and handling—I might gradually weave my whole personality into a state of dissociation that would ultimately lead to the system of delusions we recognize in the constellation of paranoia. I might—but for the more spontaneous and consistent activation of my total organism in relation to the accustomed world of surrounding actuality.

Nevertheless even in man's motoral activity there are extravagances of behavior that are commonly blinked by the social community generally because of its own predominantly motoral adaptation. These extravagances present significant data to the unbiased observer of them. The compulsory and uncomfortable styles of dress or deportment adopted by us, the artificial social ceremonials and pretenses to which we laboriously subscribe, the obsessive programmes of competitive work we pursue throughout a lifetime, the mad excesses of "normal" people in the over-use of fattening foods, of alcohol and narcotics, their exorbitant accumulation of unusable possessions—possessions which, like their fat, only burden the organism [18] and are for the most part gathered

[18] Haven Emerson (speaking of diabetes) says: "In the main bulk of cases the problem is one unrecognized by the average man and woman, namely, an imbalance between the body need for fuel to meet the ordinary demands of energy, heat, growth and repair, and the use of food as tempted by opportunity and supply." ("Public Health Awaits Social Courage," *American Journal of Public Health*, 1934, Vol. 24, pp. 1005–1022.)

at great cost in time and energy merely that other motorally competitive persons may witness the impressive collections of things they have managed to amass—these partitive expressions of the community's motoral images or phantasies may only be brought to book when they are permitted to take on the markedly outstanding evidences of social pathology which fundamentally they embody. Perhaps the most conspicuous example of this form of social pathology is the phenomenon we label "crime." The response of the community to this type of motoral infraction is, invariably, additional motoral legislation and the imposition of institutional guardianship or other penalty. This extreme motoral response occurring in the domain of criminology finds its analogue in the community's parallel response to extremes of sensory maladjustment. In this situation in which the individual's isolated and extravagant phantasies stand out in sharp contrast with the community's normal sensory images, the deviate individual is called "insane" and is correspondingly relegated to an asylum for his special care and treatment.

This confusion in external, motoral reactions is traceable to arbitrary inferences within the subjective field that are analogous to the inferences we have seen to exist in the objective field of man's relations. In the latter field we saw that where visual and stereognostic accommodation go hand in hand, the individual's perception is entirely consistent and he is adequately oriented toward the object before him. His adaptation to the external object or condition is appropriately mediated by means of his internal adjustments in relation to the object in question. Likewise, in man's relation to his fellows with whom he is organically or subjectively continuous as an element in a common species, his coördination in respect to them is a matter of orientation based upon his internal tensions and adjustments. That is, the merely visual impression acquired externally, objectively, through an individual's projective perception of another should naturally be augmented or corroborated through wholly spontaneous adjustments internal to himself. What we have seen to be the individual's stereognostic orientation in the field of his projective senses toward outer objects would naturally have its parallel in the proprioceptive reactions of his total organism in relation to

others of his kind. This proprioceptive function, however, is largely intercepted and in a measure nullified through the artificially projected space-time illusion partitively incurred through the organism's axial habit of reference and the concomitant social affect-image which the individual arbitrarily forms of himself and others.[19]

Were there not this internal adjustment and coördination of the kinesthetic or stereognostic function of the total organism in relation to the retinal stimulus received from an object, the direct visual process would avail us little. All manner of unwarranted inferences as to the nature of the object and its objective relations to or distance from the observer would cloud and confuse the observer's space-time relations in respect to it. So that the organism's participation in general body-tensions and "accommodations" with respect to the object observed is an integral part of our so-called visual perception and an indispensable factor in man's bionomic adaptation to the external world.

Man's visual perception, like that of related animals is, genetically, a purely tentative faculty. In the beginning of his relation to the external universe the growing child, like any other animal, is an experimental bionomist. He is constantly adjusting, constantly testing his observation of the outer world in accordance with a bionomic principle of trial and error. Through repeatedly checking his kinesthetic or proprioceptive alterations and adjustments in relation to the size, the intensity and the outline of the image formed upon the retina, the individual builds up within his own tissues those internal, subjective or organic space-continuities which are to constitute the organism's ultimate equipment in its adaptation to the world about it. Not by the use alone of the foot rule or other lineal measure does man gauge his spatial distance from and his concomitant adaptation to his object, but by the gradual building up of a complex of internal space-time coördinations and relationships the organism gradually learns to adjust itself to its environment.

With our acquisition, then, of a species of perception that is

[19] Burrow, Trigant, *The Social Basis of Consciousness—A Study in Organic Psychology*, International Library of Psychology, Philosophy and Scientific Method, New York, Harcourt, Brace & Co.; London, Kegan Paul, Trench, Trubner & Co., 1927. Chapter II, "A Relative Concept of Consciousness: An Analysis of Consciousness in its Ethnic Origin."

mediated socially through the employment of the symbol or exteroceptive sign, there arose for man a new problem in the sphere of his internal space-time relations or in the sphere of his proprioceptive adjustment to his environment. Through the physiological restriction of incoming stimuli to the cortical (symbolic) segment, these stimuli, which would naturally correlate themselves with the organism's total action-response, now make connection only secondarily with the organism's total pattern of action. Man's very convenient shorthand method of merely tabulating objects through the symbol-forming function of the cortex involves a new and specially circumscribed area of adjustment physiologically, and the interposition of this adjustment modifies materially the primary adaptation of the organism as a whole to the object as a whole. This special function, though mediated through the exteroceptors, is, of course, intrinsically as much a part of the organism as is the organism's deepest proprioceptive function. With respect to the mere physico-chemical activity of the retina in the process of vision there exists a correlation with the organism's neuromuscular system as a whole. But there is also required the same correlation—the same maintenance of balanced relations internal to the organism—with respect to the specialized function of man's cerebro-symbolic segment along with its restricted, partitive mechanisms. Just as man's optical vision would be of itself erratic and lacking in direction and control in the absence of the organism's coördination internally in respect to the visually perceived outer object, so man's mental or symbolic vision is erratic and without coördinative function in respect to the world of outer reality in the absence of the internal coördination and adjustment of this symbol-mechanism with the function of the organism as a total process. It is through the lack of this correlation between special cephalic reactions and the total action-pattern of the organism that there has resulted the present chaos of unwarranted and misleading inferences in man's bionomic adjustment. Through this miscarriage in the organism's correlation man's feelings shoot wild. They go off tangentially because of the affective and erratic system of organically disconnected impressions to which they are now a response.

This cortically organized centre or system is composed of the

symbolically perceived objects which the organism has mechanically gathered in and itemized through a process of mere partitive selection. This symbolic identification and tabulation of objects probably involved at first no conflict with man's proprioceptive functions, but proceeded side by side with the controlling and equalizing tensions that are the concomitants of his stereonomic space-sense. But this is by no means the situation with man to-day. On the contrary, he is confronted with a definite discord between his symbolic functions and his total, proprioceptive functions. Accordingly man's subjective space-relations or his kinesthetic tensions require to be restored to a state of equilibrium through a balance of adjustments between the exteroceptors of the symbolic segment and the proprioceptive function of the total organism. It is this physiological coördination between the organism's partitive or attentive function and the integral or cotentive function, that man has completely bungled in the process of his evolution toward a more integrative mode of consciousness.

Through this cerebral specialization of function with its exteroceptive systematization of processes to which I have alluded there is set up within the organism of each of us a pseudo-identity. From this localized system or *pseudo*-totality of personality there arise ideational or symbolic impressions which vicariously stimulate and direct the reactions of the organism as an *actual* totality. Though never actually supplanting the organism's primary, central principle of motivation, this pseudo-activation—this secondarily acquired systematization and coördination of reactions —entails a fundamental disturbance in the total organism's subjective space-time relations or in its kinesthetic tensions and alterations. In this vicarious activation the proprioceptive life of the organism, or the organism as a whole, is artificially restricted and embarrassed in its immediate response to external stimulation and, in consequence, within the sphere of man's external interrelations there occurs a definite impasse to the organism's bionomic adaptation as a whole.

It is because of this developmental lapse in the organism's adaptation as a race that there have resulted man's unwarranted inferences and confusions in the sphere of his feeling-life or in his subjective space-time relations. These false inferences in the

feeling-life of man parallel such inferences and confusions in his objective space-time relations as would result were there lacking a correlation between the process of vision and the organism's proprioceptive processes. It is not surprising, then, that with the existence generically of this uncontrolled internal situation, the feelings of man are a prey to the unwarranted social inferences and to the irreconcilable conflicts observable in the neuroses and psychoses. It is not surprising that in the domain of our self-styled normal processes there exist such widely inconsistent and aberrant reactions as we have observed—reactions which present, on the one hand, adjustments and pacifications in mere temporary religious appeasements, and, on the other, such disjunctive processes as political disaffections, social insanity, crime and war.

We have spoken of the control of the objective space-time relations effected through the organism's internal body-tensions in relation to the visual image of the object formed on the retina. Were it not for this proprioceptive participation and control in the function of the special senses, a blind or a deaf man would be practically a dead man. That is, if life were only a matter of visual and auditory symbols and one should cut off the symbolic connection between the organism and its object, there would be no life at all. We have already indicated that the proprioceptive process which mediates man's objective space-time relations possesses a function that is phyletic and continuous throughout the species. It is this correspondence in man's internal reactions inter-individually throughout the species that makes of this process a phyletically continuous function. In the same way the organism's itemizing of objects—a function restricted to the cephalic segment—must be regarded as a process that runs through and conditions man's cortical reactions as a race. Accordingly, this arbitrary attempt of the partial, cortical segment to "emancipate" itself from the organism's total or proprioactive function and its vicarious misappropriation of total processes has occasioned inter-individually or racially a serious disturbance in the proprioceptive, equalizing tensions of man's organism.

The artificial interval that disrupts the processes of man's life is, therefore, not primarily an interval between one individual and another, or between one community or nation of individuals and

another. It is an interval existing within the total organism of man as a phyletic unit. The functional cleavage it entails marks a separation between the cortical or exteroceptive function and the intero- or proprio-ceptive function of man as a race. It is idle, therefore, to seek an adjustment either inter-individually or internationally. The adjustment, whether for individual or nation, requires to be made between two now artificially divided spheres of the organism's internal function regarded as a phyletically unitary whole. Just as the individual's objective space-sense is dependent upon a mechanism lying wholly internal to his organism —the specific mechanism of balance between eye and total body-tension—so man's subjective space-sense, the sense of his subjective continuity with others of his kind, is a condition which can be regulated only through processes internal to himself. It can be regulated only through a balanced adjustment between his cephalic tensions and his internal body-tensions as a total organism.

To sum up: The relation of man, the total organism, to the total objective world, is then not primarily projicient, lineal or telescopic. By virtue of the internal, multi-dimensional balances and tensions of the body-total in relation to specific incoming sense-impressions the organism is related to a world of multi-dimensional solidity. Thus, through the subjective, kinesthetic space-control internal to the organism, man is related not only to the partitive, symbolic feature of an object which, in virtue of the selective, axial system, now stands in place of the object itself, but he is also related to the cluster or constellation of qualities or impressions which give actuality to the object as these qualities existing in space and time are variously reported to the composite of receptors represented by his total organism. When we come to rationalize, to explain "mentally" our bionomic relation to the environment—when we come to explain life through our habitually projicient, lineal or telescopic habit of observation and contact with it—our overwhelming involvement in this vicarious mode of thought causes us to lose sight of the constant relation of the total organism to the total environment maintained by means of the mass-tensions or the total adjustments primarily operative within us.

As I have said, in the organism's relation to the objective world

its total or proprioactive function constantly "corrects for" this inadvertence of judgment in the cortical or projicient field. It examines, touches, grasps and otherwise verifies the substance or reality of the object in question. But with the lineal, selective, itemized process of perception functioning now as a long established and universal habit, this same habit extends itself to the relation between individuals who represent continuous elements in a common species.[20] "Seeing" objects only "visually," as we symbolically presume, that is, quite independently of their total space-relation to the total mass- or space-adjustments within the organism, one believes that he also "sees" other individuals of his own species only through this same lineal process of selection and itemization. He leaves quite out of account the subjective mass- or space-continuity existing phyletically among the individuals of a common species. He leaves wholly out of account the constant adjustment of their relation totally one to another quite apart from the cortical function of seeing and symbolization. The result has been the arbitrary projection of unwarranted telescopic or lineal sensations and reactions toward this or that particular individual as though he were a detached, unassimilable item in a projective universe appreciable only through the symbolic or projicient segment.

This defect of adjustment that affects the total internal solidarity of man in relation to the world of external solidity is not a defect which a merely symbolic, lineal, ideational process is competent to remedy or remove. Our mental systems—psychological, philosophical, psychiatric and what-not—can avail us only in the mental, the symbolic or ideational sphere. They can make no contact with the behavior-solidarity of man's organism as a total-dimensional actuality.[21]

The problem, then, of adult man is not political or sociological, it is not psychological or psychiatric, it is not ethical or religious, it is not even educational in the sense of detached, cortical "in-

[20] In an early and important contribution Dewey points out that in the sphere of reflex action we tend to interpret as mere "disjointed fragments" what are really aspects of one continuous constellation—what is "just a change in the system of tensions."

Dewey, John, "The Reflex Arc Concept in Psychology," *Psychological Review*, 1896, Vol. III, pp. 357–370.

[21] See note 11, page 53.

formation"; the problem of man in his adjustment to himself and to others is not in any sense a philosophical or metaphysical problem. It is a problem in behavior, a problem in biology and in evolution; it is as truly a concrete, tangible, bio-physical problem as is the problem of the physicist, the anatomist or the bacteriologist.[22] But this problem of man's self cannot omit account of the internal self of man—of the proprioactive functions which regulate man's own neuromuscular relation as a totality to the objective world about him by means of those internal continuities in space and time which are fundamental to his own organism and which are constituted of the organism's proprioceptive, cotentive life.

By way of introduction to Part Three I would like now to devote space to a chapter which may serve as a brief résumé of the elements in the theme we have thus far considered and which may serve also the function both of tying these elements somewhat more closely together and of assuring greater concreteness in the reader's feeling toward the aspects of the thesis that will follow in the Third Part. I say "concreteness of feeling," because it is only as the student acquires a sense of the application to himself of the internal physiological factors operative within the individual and the phylum that he will be able to appreciate with me the influence of these factors in causing the disorders of function we share in common with the rest of humanity. For there is need that the student attain an intimate objective appreciation of the processes of adjustment required among us as a community if he is to contribute to the readjustment of the distorted tensions that now activate man's thinking and feeling.

[22] In a paper by Meyer Solomon, "The Struggle for Equilibrium" (*The Journal of Abnormal and Social Psychology*, 1934, Vol. XXIX, pp. 334–347) this writer discusses "the principle of equilibrium" and cites the increasing tendency of biologists, physicists, sociologists and chemists to the use of common terms taken from the field of energetics and mechanics.

PART III

ORGANISMIC PATHOLOGY
OR
PHYLOPATHOLOGY

"Take interest, I implore you, in those sacred dwellings which one designates by the expressive term Laboratories. Demand that they be multiplied, that they be adorned. These are the temples of the future—temples of well-being and of happiness. There it is that humanity grows greater, stronger, better."

PASTEUR

CHAPTER X

THE ORGANISM AS A WHOLE AND ITS PHYLOANALYTIC IMPLICATIONS

THE physician occupied with behavior-disorders may say, "Here is a sick or neurotic organism in the midst of a healthy society." Or he may say, "Here is a sick and neurotic organism in the midst of a society of sick and neurotic organisms." Finally he may take the ground: "Here is a sick, neurotic organism, but this organism is really an expression of society itself and I am myself, of course, necessarily a part of this ill behavior-condition affecting society." It is the latter position which, I think, will be found most profitable, as I think it will be found most in keeping with the principles and postulates prevailing in analogous fields of scientific endeavor.

As has been said, in all departments of investigation science has dealt with intrinsic structures and their behavior, and it has considered these behavior-processes always in relation to the total field of which they are an intrinsic part. In the sphere of medical investigation the effort has been to establish the structure and function that is basic and consistent throughout the species as an integrated whole and from this basis to determine divergences of behavior as they occur in a particular individual or colony of individuals. It is true that from an anatomical, mechanistic view-point, investigations of the behavior of the human organism have been carried out with equal scientific consistency. But within the domain of man's personal and social interrelations subjective factors have intervened, and the intrusion of these subjective factors has seriously interfered with the clear discrimination between reactions that are typical or consistent throughout the species and reactions that are atypical or that present divergences from an

objectively established norm such as exists in other fields of science. Indeed an investigation of the reactions occurring within social groups makes evident that there is no sphere in which the body of systematized observations comprising science has been so generally subordinated to conventionally systematized prejudice as the sphere of man's behavior-processes and its disorders—the sphere, namely, of man's own personal and social motivations.

We are all familiar with the systematized body of prejudices underlying the behavior of man as expressed in the social conflicts of political parties, religious sects and similar groups, and we are familiar with the individual and social disorders they entail—class hatreds, international disputes, inequalities of opportunity, neurosis, crime and war. These discrepancies in function that occur individually and socially are obviously expressions of divergence and conflict. But neither in the individual nor in the social group has the behavior characteristic of the human species as a whole been scientifically determined. In the sphere of our inter-individual relations neither the disorders we may observe in the behavior of a specific personality nor the disorders occurring in the wider community have yet been objectively measured and appraised in relation to the behavior that is basic and consistent throughout the species. In other words, phylobiological investigation indicates that disorders affecting human behavior have not been studied in relation to an objectively established norm. It indicates on the contrary that the reason habitually assigned by people in explanation of their mental and social reactions, whether in favor of or against one another, bears no relation whatsoever to the actual cause of their reactions—not any more than the reason assigned by the individual neurotic is the real cause of his conflict. In a word, within the sphere of man's behavior-processes and its disorders, investigation offers evidence that people's habitual explanation of their behavior rests not upon a body of scientifically systematized observations but upon a body of subjectively systematized prejudices. It offers evidence that man's subjectively systematized prejudices—his purely preceptive, inferential premises—form the social basis of those divergences which may be observed clinically in the arbitrary, wishful phan-

tasies and hallucinations of the dissociated individual. As these preceptive inferences have thus a direct bearing upon the problem of mental and nervous disorders, they possess a specific interest for the physician and the psychiatrist.

For many years Dr. Adolf Meyer has formulated in various lectures and writings his conception of the organism as a whole.[1] He has emphasized the need of recognizing and of dealing in practical, biological terms with the sum of the organism's various functions as these various and interrelated functions constitute, to use his own words, "the individual's total personality" or "subject-organization." [2] Dr. Meyer has at all times laid emphasis upon the concept of the personality as the totality of the functions of the organism in action and has insisted upon reckoning the individual's mental health in the light of the organism's total relation to its surrounding environment.

I think it cannot be denied that with all of us our adjustments and readjustments of outlook necessarily arise from our own particular background of intrinsic make-up as of extrinsic conditioning. It happened that with myself the application of the concept of the organism as a whole took social form. My interest in this view-point lay in its relation to neurotic disorders. The aspect of this conception of the organism as a whole that made special appeal to me was the possibility of its bearing upon the organism of man in its make-up and conditioning as a social community. Regarding the organism's function from this more inclusive pro-

[1] Meyer, Adolf, "Fundamental Conceptions of Dementia Praecox," *The British Medical Journal,* 1906, Vol. 2, pp. 757–759.

"What do Histories of Cases of Insanity Teach us Concerning Preventive Mental Hygiene during the Years of School Life?" *The Psychological Clinic,* 1908, Vol. 11, pp. 89–101.

"The Rôle of the Mental Factors in Psychiatry," *American Journal of Insanity,* 1908, Vol. LXV, pp. 39–52.

"The Problems of Mental Reaction-Types, Mental Causes and Diseases," *The Psychological Bulletin,* 1908, Vol. 8, pp. 245–261.

"The Value of Psychology in Psychiatry," *The Journal of the American Medical Association,* 1912, Vol. LVIII, pp. 911–914.

"Conditions for a Home of Psychology in the Medical Curriculum," *The Journal of Abnormal Psychology,* Dec. 1912–Jan. 1913, Vol. VII, pp. 313–325.

"The Contributions of Psychiatry to the Understanding of Life Problems," paper delivered at the celebration of the 100th anniversary of Bloomingdale Hospital, May 26, 1921. Privately printed.

[2] Meyer, Adolf, "Objective Psychology or Psychobiology with Subordination of the Medically Useless Contrast of Mental and Physical," *The Journal of the American Medical Association,* 1915, Vol. LXV, pp. 860–863.

gramme of activation, human behavior may be seen in its larger affirmation and totality. The affirmation and totality of function I was led to make specific inquiry into had to do with those behavior-motivations within the individual and the community that affect man's interrelations as a social unit or group.[3]

Due to my observations in this field of man's behavior as a species, my basis of reference has undergone a marked alteration. From having been occupied only with obstruction and conflict, with disfunction or part-function as presented in the individual patient, I now sought to set aside this limited preoccupation with the part and its disfunction as observable in this or that individual. I felt the need of placing the stronger accent upon the organism's behavior as an integrated whole rather than holding to a preoccupation with the single item and its negation, or with mere disfunction and the part. Regarding the mere symbol or word as subsidiary to the affirmative mood in whose service it should be but an instrument, it was the effort of my associates and myself to embody within our own total behavior the affirmation and totality that form the key-note of phylobiological reorientation. From this background I attempted to study the behavior both of the individual and of the group in relation to the behavior that is basic and consistent throughout the species as a whole—the behavior that is characteristic of man's organism as a totally integrated phylum. While from the first I took the ground that my own behavior was necessarily involved in the behavior study I had undertaken, when it came to the point of actually including my own cherished processes in a quite impersonal group-analysis, the altered adjustment presented extreme difficulty. Indeed, I need hardly say that in the degree in which my own reactions were actually involved subjectively in the social disorder of behavior I was attempting to study objectively, my efforts at first proceeded very gropingly, very awkwardly. Nevertheless, in this process of phyloanalysis there was the increasing tendency toward a group as well as toward an individual synthesis—a syn-

[3] However divergent in principle, method and technique from the group investigations of my associates and myself, at the recent meeting of the American Psychiatric Association, "Group-Analysis," far from being wholly anathema as a psychoanalytic procedure, formed the subject of no less than five different papers.

thesis that tended to establish the consistency of the organism's behavior throughout the species as a primary organic norm beside which our individual and social divergences of reaction could be examined in their objective contrast. But I shall try to show more concretely what I mean by this.

With the launching of the life of an organism as an independent individual, its behavior represents a total response within a total bionomic field of reactions. The animal that passes at birth from the enclosure of the maternal organism passes at the same time *into* the enclosure formed by the pattern of its group, herd or community. The organism of the new-born animal straightway finds in the bionomic configuration of its new environment a nutritive and protective matrix of common sense-reactions and motivations.

With the human organism, however, its natural passage from the parental envelope into the total behavior-configuration that primarily integrates the group or phylum is largely intercepted.[4] The organism's total or primary configuration is early deflected into the socially constructed system of partial reflexes we know as man's code of signs or language—a system of responses to which the organism has become verbally conditioned. So that in the human organism its primary process of adaptation undergoes at the outset a secondary deflection. Instead of the infant's passing spontaneously into the primary integrative unit characteristic of its species, the human organism becomes secondarily assimilated into the adventitious system that forms its mental and social medium of interchange. That is, a partitive, symbolically reduced model of the organism's behavior—a greatly diminished replica of its primary pattern of action—is substituted for the organism's behavior as a whole. As an example, in the word "swimming"—in the vocal or motor pronunciation of the word —the organism experiences a miniature form of actual natation.[5] Indeed we do not half realize the degree in which our words rep-

[4] Cf. pages 88–89.

[5] Paget's thesis furnishes an excellent clue to the reduced models of behavior the organism expresses through phonation or articulation. (Paget, Sir Richard, *Human Speech,* New York, Harcourt, Brace & Co., 1930. For a brief version see article by the same author, "The Origin of Language," *Psyche* (London), 1927, Vol. VIII, pp. 35–39.)

resent *actual behavior* partitively performed within a circumscribed segment of the organism.[6] This mimic pattern of action circumscribed within the organism's symbolic segment and operating socially or inter-individually among us tends more and more to encroach upon the organism's total behavior-configuration. Thus, through the accidents of his evolution, man now tends to function within a miniature behavior-system which, in its overt expression, automatically replaces the larger system of behavior governing his organism as a species or total configuration.[7] With the gradual interpolation of this new integrative arc or ambit and with the corresponding subordination of the primary behavior-ambit or configuration that motivates the organism as a whole, the individual becomes equipped to enter the social group whose responses have now become largely conditioned to verbal or symbolic stimulation.[8] He enters a group whose encircling, protective environment is now fashioned of those secondarily integrated reflexes that constitute for the growing organism the mere signs and intimations of things. In short, as a result of his early training, the child is enveloped not so much within a spontaneous

[6] All literature is, in fact, a partitive or miniature behavior-reaction. Cavalierly abrogating the function of the organism as a whole, what our popular writers get away with in this respect is quite unbelievable. There is, in fact, no more enterprising form of racket. I know a writer who is untruthful, dishonest and unwashed, yet whose miniature expression of "harmony" and "beauty," whose rhapsodies over the grace and loveliness of childhood, receive a high place in our foremost periodicals.

[7] The gradual dissipation of the organism's total basis of behavior is recognized by various psychologists. Kurt Lewin says that "the child, to a greater extent than the adult, is a *dynamic unity*. The infant, for example, acts first with its whole body and only gradually acquires the ability to execute part actions. The child learns only gradually to separate out voluntarily certain parts of its environment, to 'concentrate.'" (Lewin, Kurt, "Environmental Forces," *A Handbook of Child Psychology,* Second Revised Edition, Edited by Carl Murchison, Worcester, Massachusetts, Clark University Press, 1933, p. 619.) This view is directly in line with the embryological findings of Coghill. See also note 13, page 75.

[8] The extent to which the organism's feeling and thinking reaction as a whole has been transferred to the symbolic segment is illustrated by the following quotation from Piaget: "Stern noticed that his four-year-old daughter confused thought with the voice. She said expressly that we think with the mouth and tongue. This spontaneous remark of a child gave us the idea for a systematic inquiry on this point. We asked sixty children between the ages of four and twelve what one thinks with, and whether one can see and touch thought. The results of this inquiry were very clear. All the children under about seven answered, like Stern's little girl, 'We think with our mouths.'" Piaget, Jean, "Children's Philosophies," *A Handbook of Child Psychology,* Second Revised Edition, Edited by Carl Murchison, Worcester, Massachusetts, Clark University Press, 1933, p. 534.

field of total, bionomic reactions as within a field of vicarious symbols that more and more replaces his total relation to the total world of objective actuality.[9]

It was the common experience of all of us that at a certain age —at the age of two or three years—having, through our nursery training, become adept in the use of certain symbols, certain social meanings or behavior-conditionings and their attendant prohibitions, we were permitted to enter the larger home circle and to take our place at the family table. In being absorbed thus into the family unit, we were admitted into what is for the individual his first symbolically systematized social group or community.

Here at the family table the process of the organism's bionomic weaning grows apace. With the substitution of a partitive pattern of action that henceforth employs only the signs and tokens of behavior there develop concomitantly the mere signs or tokens of *feeling*. Thus our verbally conditioned affects—those symbolic motivations that are a mere charade of the organism's primary, total behavior—more and more replace, overtly or socially, those native behavior-configurations which first integrated the individual as a total organism within the organism of the total group or phylum.[10] This diverting of the infant organism from the total action-pattern that forms the primary basis of behavior in the individual and the phylum, and its substituting, instead, a partial pattern to which the organism is reflexly conditioned through the use of words or symbols, epitomizes the behavior-adaptation of civilized individuals and communities throughout the species.

The family table, then, with its secondary, artificial conditioning is not a remote or esoteric innovation. The family table is a social institution and presents an immediate and internal social problem. The codes and promulgations, the conditioning symbols and psychological meanings in which it abounds, are not distinctive for any particular family. They are equally characteristic and equally rigid for the family next door, the family across the street, for families in the rest of the block and in like

[9] See note 10, page 114.
[10] Cf. page 117. See also note 2, p. 46.

blocks throughout the city, as throughout like cities and like communities the world over. What is canonical in the pattern that forms the social unit of one family is canonical for families everywhere. In short, the adjustment which the organism of the child undergoes in early infancy is the biological prodromal of those individual and community patterns of alteration which characterize the community generally and which, from the point of view of our obligation as students of behavior-disorders, should be seen as characterizing ourselves in particular. So that the phylogenetic and internal significance of our problem hardly requires emphasis.

What needs to be emphasized is the circumstance that, within the home circle or at the family table, the child becomes more and more enmeshed within a reflex system of conditioning verbal images. He becomes gradually trained to manipulate those partial (affective) patterns of reaction that form the signs and signals of behavior in place of the organism's behavior as a total pattern of action.[11] Because of the secondarily conditioned pattern of responses inculcated at the reflexly integrated family board, the immature individual builds up a definitely mimeographic, symbolic behavior-system that is partitively motivated, and through this affectively distorted mechanism he substitutes a mode of reaction that is not primary or typical but that increasingly diverges from the mode of behavior that is basic and consistent throughout the species as a whole.

If man is to appreciate the degree in which the word or sign has intercepted the contact of his total organism with the total object before him, he must invoke a frame of reference that is very different from the reflexly conditioned frame of reference that determines his present social basis of outlook. This altered basis of reference, this need to reckon objectively with an inconsistency in internal patterns that affects us as a community or race calls for a very fundamental adjustment in our psychological as in our anthropological and ethnological prepossessions.[12] If

[11] Cf. pages 117 and 181.

[12] The valuable and painstaking field researches of many ethnologists such as Boas, Radin, Malinowski, Kroeber and Benedict have not always discriminated between man's socially conditioned forms of cultural pattern and his underlying, racially pervasive motivations.

we are to adopt a pattern of behavior that is internal and racial, the altered basis of adjustment required must also be internal and racial. Contrary to Biblical traditions, "in the beginning" there was not the word, nor was the word made flesh.[18] In the beginning there was only the flesh with its total instinctive behavior, and out of this total mechanism or pattern of reaction there was quite secondarily produced the partitive pattern of reaction expressed in the word or symbol. So that however intriguing from the point of view of folk-lore, the Apocalypse really got us off to a bad start. The symbol is nothing more than a sign-board and as such it is merely the handmaid of the organism as a whole. At all times its function is only that of a special delegate, a temporary appointee. The symbol can never really act as the vicar of the total organism. It is in this rôle of surrogate or pretender that the symbol has gotten so far above itself that it has now become a biological parvenu.

According to investigations of the reactions of social groups, the behavior-constellation circumscribed within the organism's symbolic speech-segment consists of an inter-individual, social pattern or configuration. But there exists also a behavior-configuration that represents the motivation of the organism as a whole, and this total pattern of behavior is correspondingly coterminous with the organism as a genus or phylum. The partial reactions expressed in speech represent a reflexly conditioned

[18] In writing this passage I recalled these delightful lines of Goethe's:

"Am Anfang war das Wort.
Hier stock ich schon—wer hilft mir weiter fort?
Ich kann das Wort so hoch nicht schätzen,
Ich muss es anders übersetzen
Wenn ich vom Geiste recht erleuchtet bin.
Geschrieben steht: Am anfang war der Sinn.
Bedenke wohl die erste Zeile,
Dass deine Feder sich nicht übereile!
Ist es der Sinn, der alles wirkt und schafft?
Es sollte stehn: Im anfang war die Kraft!
Doch, auch indem ich dieses schreibe
Schon warnt mich was, dass ich dabei nicht bleibe.
Mir hilft der Geist! Auf einmal seh ich Rat
Und schreibe getrost: Im Anfang war die Tat."

Such passages afford additional insight into this amazing genius who not only wrote poetry but who was at the same time so intuitively adept in biological method as to have presaged from analogies in the field of comparative anatomy the existence in man of the intermaxillary bone—a scientific prediction which he

response that is social. While socially or inter-individually this verbally conditioned reflex has now become overtly dominant, nevertheless from the basis of the total phylum this acquired reflex is but the servant of the organism's motivation as a whole. As I have said, this interpolation of a secondary neural mechanism, that now superficially or overtly dominates the behavior of the species man, is subject to readjustment only as man's primary physiological system resumes sovereignty over this renegade and wholly divergent partitive pattern of action. In our effort of readjustment, words won't do the trick. Words and the circumscribed mechanism of motivation underlying them *are* the trick. And so our group inquiries have led us to repudiate the symbol or the word as a basis of behavior appointed in the beginning and constituting *per omnia saecula saeculorum* man's primary motivation. They have led us to return instead to the generic basis of man's behavior of which his words are but the outer sign or index.

It must not be thought that I wish to abrogate the use of symbols—that I have any desire to render man mute and inarticulate. Quite the contrary, my interest is precisely in man's greater facility in the use of this reflexly induced symbolic pattern of communication through his reintegrating it within the organism's primary pattern of behavior as a whole. Although we are at this moment employing the symbol in our very effort to reckon internally with man's behavior in terms of internal physiological alterations, the symbol we are employing is merely an inter-individual code and is therefore not primary as an agent for motivating and sustaining the organism's total behavior as a species. But due to the affect-coloring it has acquired, the symbol now represents an unrecognized process of social conditioning that has been induced within the phylum through the inception of man's mimic phonation or language. This process, recapitulated ontogenetically in the nursery and at the family table, induces in the child an inter-individual pattern of behavior

himself was the first to verify through actual observation. This circumstance serves to support the thought that "at heart" (intra-organically) or from the point of view of the total organism the really great poets are potentially, if not actually, also biologists. How could it be otherwise since poetry is but the exteroceptive reflection of harmonious interoceptive processes residing within the poet himself?

that now functions vicariously, verbally, as the dominant motivation of the organism's behavior as a whole.

Accepting this unit of the family table as the basis of reference in the determination of individual and community behavior, I attempted along with my associates to establish a more or less stabilized group-table or "family-board" replete with all the conventions and paraphernalia to which each member of the unit was "born and bred." For sixteen years we met according to Hoyle three times a day, but with a very different aim from that imbued by the dominating social pattern of interchange to which we had been severally conditioned at the parochial family table. Our purpose was that of applying a method of objective inquiry to reactions and processes which we had until now accepted subjectively on their face value. It was our effort to apply controlled observation to processes hitherto tacitly accepted as the *bona fide* pattern of social interchange, namely, the pattern of secondary, inter-individually conditioned responses that now everywhere govern human behavior. With a view to relating the behavior of the organism to reactions that are typical and consistent throughout the species, this conventional social unit has daily adhered throughout these years to the consistent study of itself and its prevailing postulates regarding the accepted motivations determining human conduct. The result has been the increasing evidence that the basis of motivation in the individual and in the community, as inculcated at the family table, has inadvertently created a reaction-consensus or social institution that calls for definite reckoning and adjustment on the part of students of behavior. This social reaction-consensus calls for reckoning because of its divergence from a system of totally integrated reactions that are basic and consistent throughout the species.

At the very outset, then, there occurs a disturbance socially in the personality's "subject-organization," to use Dr. Adolf Meyer's very apt term.[14] From the point of view of the organism's total behavior there is created an artificially circumscribed identity-constant or self-summation that becomes increasingly separated from the self-summation or identity that is primarily integrated within the organism's total configuration as a phylum. In a word,

[14] See note 2, page 249.

from the beginning of the organism's development as a separate entity, its behavior is modified or adjusted in respect to two integrative systems of reaction, and due to the influence of these two systems of behavior man's subject-organization or personality-summation is now represented by two distinct reaction-systems or *personae*. These consist on the one hand of the persona with which the individual is invested by the family group and which constitutes a symbolically integrated or partitive "I," and on the other, the persona that represents the organism's primary endowment and constitutes man's totally integrated or generic "I."

A thesis that deals with the phylogenetic nature of behavior-disorders and with our own necessary involvement in behavior implications affecting man as a race presents a field of inquiry which, I believe, calls for careful consideration. For under conditions which permit a laboratory study of the behavior of the individual or element in relation to the pattern of behavior that is basic and consistent for the species, it may be demonstrated that the individual has become integrated into a personality or identity-centre of motivation that is not governed by the organism's behavior as a whole, but is on the contrary entirely conditioned to the external word or to the organism's reflexly conditioned symbol-pattern of response. In place of the organism's total personality or the individual's "subject-organization," the student of behavior, like every other individual, has himself become integrated into a socially systematized persona that is only symbolically or pseudo motivated. Because of our training in the use of the symbol or the word, we ourselves have been rendered continuous with this acquired pattern extending throughout the social environment.

This ontogenetically and phylogenetically created centre of personality—this pseudo- or ego-genic persona artificially inculcated in the individual and in the community—becomes separated or dissociated as a social phenomenon from the organic configuration of the species in its behavior as a whole. This restricted behavior-pattern characterizing the individual and the community becomes dissociated from the organism as a whole precisely in the degree in which the organism of man has become secondarily knit into this artificial plexus of partitive or socially

conditioned behavior-reactions. Because man is necessarily self-enveloped in configurational alterations which are internal to himself as a race or phylum, he little realizes the extent to which the word, or rather the symbolically articulated system of behavior that produces the word, intercepts the immediate and spontaneous contact of his total reaction-system with the total and immediate environment about him. He little suspects the degree to which the interest naturally uniting his organism as a whole to the whole object before him is deflected into mere word-affects or part-functions.

While it goes without saying that our experimental table-unit was made up of intelligent, educated, well-intentioned individuals, it was no simple matter to bring to book this table d'hôte of behavior into which one is inducted during early nursery days. For it was the automatic tendency of every student to employ the symbolically motivating pattern of the partitive persona and to shy away from his self-allotted task as an element in a primarily integrated unit or social group. Each student, for example, being activated by the partitively conditioned persona or ego-constellation of his early childhood rather than by the organism's totally integrated pattern of motivation, would invariably respond with the reflex, mimic reaction of his miniature or lesser behavior-system. With unerring fidelity to this symbolic, this egogenic or I-begotten pattern of behavior the entire group, becoming inter-individually or socially stimulated to this reflex, partitive pattern of response, would faithfully reproduce the organism's secondary, nursery pattern of reaction and present, in general, its early partitive or family-conditioned ambit of behavior. The result was all manner of reactions patterned upon the "normal" criteria of behavior—personalism, sentimentality, competitive righteousness, irritability, efforts to know more than others or to curry favor, and so on and so on.[15] In short, there was presented the organically negative *dis*function or part-function expressed in the merely exteriorized, symbolic reaction of "good" or "bad" conduct, wholly regardless of the integrity of function that motivates the organism's reaction as an integrated whole. In fact there was exactly the same *mis*behavior within this

[15] See note 11, page 53.

table-unit and within subsequently formed groups as at the early family table at which each member of the group had originally become socially conditioned. And this notwithstanding that within a total phylobiological frame of reference it is quite inconsequential whether the "misbehavior" is socially credited as "good" or discredited as "bad." [16]

But it must not be thought that I am indicting any particular group. On the contrary, I must here emphasize the circumstance that we who are physicians and psychiatrists are by no means strangers to the social process I have indicated. I must emphasize the circumstance that the modification in internal pattern I have described as taking place in the period of the child's early growth is a modification that remains overtly dominant for our own behavior in the present moment. The miniature or microgenic pattern of behavior substituted in childhood for the larger macrogenic configuration of the organism as a whole is to-day the pattern or configuration that prevails throughout the adult behavior of us all. For the early family group is but the paradigm of adult group organizations the world over. Having ourselves been early inducted into this secondarily integrated system of behavior incurred by us through our reflex, inter-individual or symbolic conditioning, it is now part and parcel of the adaptive pattern that activates ourselves both as individuals and as social communities. However, by the very nature of the partitive, symbolic, projective system, we who are now symbolically conditioned by it necessarily attempt to project or to handle merely symbolically the social or inter-behavioral problems which this secondary system of adaptation has itself created. But far from being alien or unfamiliar to us, the discrepancy between man's primarily integrated group-reaction and the social reaction to which he has now become secondarily conditioned constitutes a behavior-problem that is internal and immediate to our own organisms. It is as internal and as immediate to our own organisms to-day as in the days when it was first inculcated in us in early childhood. In the social constellation, therefore, in which we as students of behavior-disorders find ourselves we are not detached investigators dealing with remote intellectual statistics,

[16] Cf. pages 27–28 and 47.

sociological or otherwise. Nor are we confronted with some phenomenon entailing a distant, prehistoric or paleontological tradition. We who are students of behavior are ourselves the material with which we are ourselves attempting to deal. The early nursery group of each of us was but the rudiment of the social group in which we find ourselves to-day. The process which for the individual as for the race constitutes the *faux pas* of our childhood, namely, man's reflexly or verbally conditioned deviation from behavior-reactions that are basic and consistent throughout the species, must now become the problem of man's adult life both as an individual and as a race. The fact must be faced that the partial or reflex ambit of behavior into which we were early initiated as children is reflexly still the organism's dominant pattern of reaction and in contrast to the organism's primary motivation still dominates our behavior reflexly no less in the moment at hand.

It would seem that we do not at all recognize how completely our interest and motivation rest now upon a basis of integration that conditions the organism's reactions secondarily, partitively or *inter*-individually. We do not at all recognize that in the process of the child's early social conditioning he derives his symbols solely from other people, and that in deriving his symbols from other people or upon an inter-individual plane of reaction he also derives from other people the partitive, inter-individual type of interest or motivation that adheres to the symbol.[17]

This inter-individual mechanism introduces a bionomic reaction-pattern that is very different from the primary reaction-pattern that relates the organism as a whole to its immediate object. As I have said, there are behavior-reactions that are typical and consistent throughout the organism (phylum) as a whole, and in contrast to these typical reactions there may be seen the quite arbitrary behavior-reactions represented in the individual's or the community's merely preceptive, autocratic, fanciful infer-

[17] Consider the broader biological significance of the transference in the light of our inter-individual social images, and the contrast of these partitively motivated reactions with the primarily integrated motivation of the organism's behavior as a whole. (Cf. Burrow, Trigant, "Social Images *versus* Reality," *The Journal of Abnormal Psychology and Social Psychology,* 1924, Vol. XIX, pp. 230–235, and "The Problem of the Transference," *The British Journal of Medical Psychology,* 1927, Vol. VII, pp. 193–202.)

ences or wishes. Our experiments with group-units indicate that man's typical reactions are those that are motivated under the supremacy of the organism as a whole, whereas the organism's atypical reactions—its inter-affective, miniature responses—are motivated under the domination of the symbolic, partitive mechanism of adaptation, and therefore always pertain to man's miniature, inter-functional or inter-individual ambit of behavior. Accordingly, it is the organism's primary, typical, *intra*-functional reactions with which we find correlated man's basic and consistent bionomic behavior, or the sphere of his objectively systematized observations; while it is the secondary, atypical, *inter*-functional or symbolic system that is found answerable for man's partitive disorganizations and inconsistencies, or the sphere of his subjectively systematized prejudices. The effect organismically and therefore socially of this bio-physical shift of motivation from the organism's primary, *intra*-functional pattern of integration into the symbolically contracted, *inter*-functional segment of motivation possesses for us as students of behavior the deepest biological and sociological significance.[18] This significance is due, as I have said, to the circumstance that man's prevalent inter-individual, microgenic reactions (his wishful, partitive inferences and motivations) constitute the social basis of those divergences of behavior to be observed clinically in the aberrations and disorganizations of the insane.

The task, then, of the medical community as of other communities is to realize the degree in which the primary behavior of man has become secondarily decentred. It is urgent that we recognize to what extent man's processes have become oversymbolized partitively, affectively, and how seriously these substitutive symbolic processes of man now stand in need of an organic decoding. This process of decoding calls for a recentring of the organism's behavior that will enable us as a community, group or phylum to reassert our primary motivation as total spontaneous organisms. This means recovering the primacy of the

[18] Syz, Hans, "The Concept of the Organism-as-a-Whole and its Application to Clinical Situations," *Human Biology*, 1936, Vol. 8, pp. 489–507.

Burrow, Trigant, "The Law of the Organism—A Neuro-social Approach to the Problems of Human Behavior," *The American Journal of Sociology*, 1937, Vol. XLII.

organism's physiological behavior as a phylum. It means repudiating the inter-individual, miniature affects that now secondarily motivate man's conduct and on the other hand it means delegating to the word or verbal image the partial, ancillary rôle appropriate to it as a mere social code. Man's verbally or socially articulated behavior is very different from the total articulate behavior of man's organism as a phylum. In short, the behavior that translates itself into mere verbal symbols or words performs a very different function from the actual reaction that behaves.

Being ourselves involved in a behavior alteration that is internal and endogenous to us, it is required that we approach this alteration as a process that is native and internal to our own organisms. We may not readjust or correct this internal alteration by applying to it the symbolic method of the verbally conditioned intellect as though this internal alteration were some remote adventitious behavior-disorder. For the anatomical machinery or mechanism of our inter-individual word-formation which has its seat within the partitive, symbolic segment has set up a behavior mechanism among us inter-individually that tends to short-circuit and obstruct the behavior motivation of the phylum as a primary physiological organism. This primary behavior-pattern, with its totally integrated systems—respiratory, vasomotor, circulatory, and cerebral—is and must remain, however, the primary, dominant motivation of man's behavior.

The reason that the reactions of man have not yet been studied on the inclusive basis of reactions that are consistent throughout the group or phylum is that all observers have thus far invariably omitted one element or individual in this generic behavior-study, namely, the observer himself. An integral organic group is, of course, an undivided unit. Where an element is left out, where there is discrimination and division among the elements —for example, between an observing element and the elements observed—there is manifestly no group in the sense of an integral organic unit. This familiar technical fallacy is apparently one that is as automatic as it is basic. Certainly nothing has been made more evident in our experimentation with our reactions in groups than the circumstance that in his relation to the organism's intrinsic processes, the student, whoever he may be, necessarily tends

to exclude himself from participation in the generic group process under observation.[19]

Our investigations show that due to this technical inadvertence the student is confronted with a serious impasse. For in attempting to look at processes which affect the race at large and which therefore affect also the observer as an intrinsic participant in these group processes, the student who omits himself is wholly incompetent to make an objective observation of the data before him. He is incompetent to view his material objectively as long as he adheres to a partitive, inter-individual and self-exclusive basis of observation. This limitation is due to the fact that the data before him are not "before him" in the sense in which the materials of the other biological sciences are before him. The observable data consist equally of the internal motivations actuating the behavior of the observer himself. Not only is there the circumstance that the observer cannot look objectively at or project mentally before him behavior in which he is himself a subjective participant, but experimentation has shown that, because of the subjective frame of reference to which the individual observer is necessarily restricted, he cannot do other than select arbitrarily or determine subjectively what he shall see.[20] Under these circumstances, therefore, neither the consistent behavior of the phylum nor its divergences is the objective determinant of what the observer shall see; the observer is arbitrarily the subjective determinant of what the behavior of man shall be! [21] This is why

[19] Cf. pages 125–126.

[20] Kenneth Burke, while recognizing the relativity of existing "orientations," fails to realize the disintegrating factors in our various social systematizations, nor does he relate these factors to a more basic principle or biological frame of reference. (Burke, Kenneth, *Permanence and Change—An Anatomy of Purpose*, New York, New Republic, Inc., 1935.)

[21] As an editorial in the New York *Times* of December 10, 1936, sagely comments in its discussion of the problem of the "eutelegeneticist,"

"Suppose we entrust the task of directing human evolution to the geneticists because of their expert knowledge of heredity. They would be no safer guides than the directors of today. Here, for example, is Professor H. J. MULLER, once of the University of Texas but now of the Moscow Institute of Genetics. He knows this subject as well as any man—has written fascinatingly about it in a little volume entitled 'Out of the Night.' To him communism is the ideal social state. A world populated by scientifically evolved idealistic workers would meet his requirements. Major LEONARD DARWIN, head of the eugenic movement in England, is equally sure that the 'upper classes' of his country should rule the earth. LENZ, a distinguished German geneticist, is all for the blond Nordic. And

everybody who has to do with human behavior is irresistibly prone to correct it rather than observe it. This is why behavior always reflects merely the subjective opinion or symbolic belief of the observer and why he can define behavior only in the projective images of "right" or "wrong" in accordance with his symbolic opinion.[22]

By the same token we students of behavior may not overlook the circumstance that we are ourselves continually employing symbols or psychological terms in our effort to describe man's symbol-pattern of reaction. And in the very psychological terms we use, and from the psychological background from which we use them, our approach is also necessarily symbolic and psychological. But the anatomical configuration involved in this miniature excerpt of behavior and the physiological mechanism by which it operates are not symbolic, psychological. They are morphological. For there is entailed a secondarily integrated behavior-system that operates inter-individually or socially and that is definitely physiological. If we are to maintain a basis that is objective at the same time that it is internal, and thus acquire a consensual and effective sense of tensions and alterations that are internal to ourselves—if we are to acquire an internal sense of an aberration in our behavior that contrasts with the consistent behavior of the organism as a species or phylum, we shall have to recognize that in our habitual approach to behavior-disorders we employ symbols to describe a physiological condition quite as though these symbols, with all the affect-reaction they embody, were the condition itself rather than the mere symbolic description of the condition. This is important. For, if we are constantly employing such symbols and psychological meanings, and our symbolic usage represents throughout the community an unrecognized lapse in feeling-perception, our behavior has become the expression of a *social equation* that is comparable

those who hold that the possession of wealth is an evidence of ability and therefore of social fitness would shed no tear if those who rail at the rich were sterilized. Give us a ruling class, whether it be composed of capitalists, communists, scientists or old-fashioned democratic liberals, and it is sure to create the Perfect Social Man *in its own image.*" (Italics mine.)

[22] In the court room, as we have seen, it is this purely subjective standard and not that of the objective laboratory, according to which the motives of human behavior are estimated.

to the personal equation of the astronomers. For we are faced with an error in internal "refraction" which we must constantly "correct for," if we are to secure ourselves against this organismic inconsistency in our own momentary reactions.[23]

In view of the trend of investigation I have here outlined I have been led to regard the problem of nervous disorders and insanity, along with man's maladaptations of behavior generally, as a problem in the adjustment of divergent neuromuscular patterns of reaction. These divergent patterns have been forced into conflict with the total organismic configuration that primarily motivates the individual and the community. Because of the demonstrable correlation between our personal and social disorders of adaptation and these divergent tensions and alterations perceptible within the organism, I have been led to the view that an effective approach to the problem of behavior-disorders calls for the adoption of a definite technique on the part of students of behavior that will permit an objective discrimination between these tensional patterns and configurations internal to the organism. Though we set out upon our group procedure on the basis of the customary psychic interpretation of behavior-disorders, the observations of my associates and myself tended increasingly to reduce these maladjustments, both individual and social, to immediate physiological terms. More and more our group-units have afforded us the opportunity to observe the presence of tensional alterations that affect the organism's immediate bio-physical processes. It became gradually evident that the conflicts and discrepancies expressed outwardly in man's disorders of behavior were due to an interference between coincident neuromuscular patterns of reaction internal to the organism, and that the essential conflict underlying our behavior-disorders is caused by an overlapping and discrepancy between these two basic, internal reaction-fields.[24]

Apparently the physiological behavior-configuration determining the primary reaction of man as a race or phylum—a configuration that is susceptible of practical test by any research group employing the appropriate technique—is objectively appreciable

[23] See note 6, page 12.
[24] Cf. pages 170–172.

within the organism by reason of the difference between the physiological pattern or design of this larger behavior-configuration and the pattern or design characteristic of the organism's lesser or symbolic behavior-ambit. As we know, the design or figure that is characteristic of a physiological pattern and that constitutes an integral element within that pattern is decisive in determining the physiological design of the pattern or configuration as a whole. Stimulating this configural element stimulates the configural design integral to the physiological pattern throughout. Touching off the first link in the total physiological design excites the entire chain of elements composing the pattern. It happens that the pattern that motivates the behavior of the organism of man as a total phylum is plainly discriminable from the partial pattern of man's secondary adoption located within the partitive or symbolic segment. These two patterns are discriminable from one another because of a conflict between the integral figures that takes place at their point of juncture.[25] This point of juncture and its attendant conflict may be detected especially in the zone of the eyes because of the dual relation of this zone or segment to the total and the partitive reaction-systems. According to the dominance of the configural design, the function of the eye-movements is very different in the two patterns. That is, the two integrative arcs or ambits present a different configural design according as the movements of the eyes occur in relation to the pattern of behavior of the organism as a whole or in relation to the configurational pattern that motivates the organism in its partitive, symbolic adaptation.

Our ineptness of adaptation is our failure to recognize that the mass distribution of the organism's energy as a phylum has taken on an altered pattern of activation. We need to understand clearly that the organism's total physiological pattern of action has become artificially decentred, that its sovereignty has been replaced

[25] In this connection the experiments of Jacobson are interesting, especially his experiments relating to relaxation of the eye-muscles.

Jacobson, Edmund, *Progressive Relaxation,* Chicago, University of Chicago Press, 1929.

"Electrophysiology of Mental Activities," *The American Journal of Psychology,* 1932, Vol. XLIV, pp. 677–694.

See also Schultz, J. H., *Das autogene Training,* Leipzig, Georg Thieme Verlag, 1932.

by the partial pattern that now centres in the localized articulation of behavior which in the inter-individual exchange of human thought and speech produces the symbol or sign. This behavior aberrancy, this decentring of the organism's primary basis of motivation through the substitution of its speech or symbol mechanism of activation throughout the phylum is now described or "explained" in terms of such epiphenomenal behavior-manifestations as occur only inter-individually or symbolically. These are the secondary behavior-reactions that are presented in their major expression in the form of neurosis and crime with their infinite category of symbolic sub-connotations or symptoms.[26]

The restoration, then, of the sovereignty of the organism as a whole through recentring its primary basis of motivation is not a mental or symbolic problem, and its solution will not be attained upon a mental or symbolic plane of inquiry. The disturbances we see outwardly expressed in the maladaptation of individuals and of groups entail a physiological alteration in the organism's behavioral motivation as a whole, and its readjustment cannot be accomplished by means of the partial, micronomic system of behavior mediated inter-individually through the symbol. We are confronted with a behavioral disorganization that may become actually appreciable only in the conflict of internal strains and tensions that constitute its actual seat.

As I said, with the child's training in the use of the symbol he is automatically taught to recognize and to associate with the symbol the individuals who trained and sponsored him in its use.[27] This again is the biology of the reaction which, when expressed in the individual, we know psychologically, symbolically, as the transference. It consists in the replacement of the object as directly related to the organism as a whole by a mental picture of the object as first imparted by the individuals who inculcated in us this symbol- or image-association. This shift of attentional fixation or interest from the immediate object to the symbol of the object and to the persons who have sponsored the symbol, represents a further aspect of the wide-spread social mechanism

[26] The symptomatic aspects of crime are perhaps nowhere better described than by Sheldon Glueck in his recent book, *Crime and Justice,* Boston, Little, Brown & Co., 1936.

[27] Cf. page 261.

to which I have applied the name of *social image*.[28] The social image covers phylogenetically the wide-spread mechanism which links in a single artificial unit the social symbol with the phenomenon of the affect. It is the mechanism which under the term "transference" was assigned by Freud as presumably characteristic only of the neurotic patient.[29] But this symbol-persona mechanism unconsciously activates the behavior of man throughout. And so in discriminating between the configural design characteristic of man's partial or reflex pattern of behavior and the configural design that marks the organism's total pattern of action, we are discriminating between motivations involving mere images of other people (along with our reaction to them affectively) and those motivations which belong to the primary, integral function of the phylum as an organismic whole.

In this procedure it is indispensable that the student have recourse to the direct observation of his own organismic sensations. Verbal explanations are not enough. But at least I can offer in verbal terms some hint of the effective technique to be employed in the effort to eliminate the internal conflict of tensions underlying our neuroses, individual and social. Yet even this hint presupposes the reader's recognition that socio-analytic observations are a prerequisite to our internal tensional definitions. Within this socio-organismic setting the initial technique which has proved of greatest assistance in the experimental work of the individual and the group consists in arresting the usual process of attentive fixation. Instead of attending to the image as projected mentally, the method consists in concentrating upon the tensional pattern or configuration that is the physiological basis of the attentive act. This procedure involves the experimenter's facility in maintaining the eyes in a consistent position of relaxation or in the position normal to the eyes when not engaged in symbolic or projective attention—the position probably most nearly approximated in the period immediately preceding sleep. The increasing sensitivity to and awareness of this primary tensional configuration and its contrast to the secondary tensional configuration prevailing in symbolic attention readily leads to a

[28] See note 6, page 28.
[29] Cf. pages 185–187. See also note 5, page 144 and note 6, page 145.

capacity of differentiation between them. The observation of an objective demarcation between these two internal patterns of reaction and the concomitantly progressive elimination of conflict within the field of the organism's behavior have naturally led to our setting aside the symbolic or mental factors commonly assigned as the causative element in neurotic disharmonies. They have led to our shifting emphasis from the organism's miniature or inter-individual segment of behavior and to our placing it, instead, upon the organism's immediate, internal behavior-configurations.

These considerations make pertinent an extension of the conception of the organism as a whole as well as of the relation of the individual as a totality to the surrounding environment. They enable us to contribute materially not only to the conception, but to the harmonious integration, of that complex of inter-relations that has been summed up and described by Dr. Meyer as the personality's "subject-organization." [30] We are enabled to regard the system of behavior-reactions comprised under the individual's subject-organization as a unitary complex of functions or, to paraphrase Coghill, as a totally integrated pattern of action whose function is primary and sovereign in relation to the systematized functions represented in the organism's secondarily conditioned reflexes.[31] This subject-organization or total reaction-pattern is, however, not confined to the individual, but represents a configuration that is inseparable in implication as in function from the organism of man as a race or phylum. With this phylogenetic extension of the personality's subject-organization, or of the organism's integration as a whole, students of behavior are in a position to approach with practical efficiency

[30] See note 2, page 249. See also Diethelm, Oskar, *Treatment in Psychiatry,* New York, The Macmillan Co., 1936, Chapter VI, Distributive Analysis and Synthesis.

[31] Coghill, George E., "Individuation versus Integration in the Development of Behavior," *The Journal of General Psychology,* 1930, Vol. 3, pp. 431–435.

"The Structural Basis of the Integration of Behavior," *Proceedings of the National Academy of Sciences,* 1930, Vol. 18, pp. 637–643.

"The Biologic Basis of Conflict in Behavior," *The Psychoanalytic Review,* 1933, Vol. XX, pp. 1–4.

"Integration and Motivation of Behavior as Problems of Growth," *The Journal of Genetic Psychology,* 1936, Vol. 48, pp. 3–19.

Goldstein, Kurt, *Der Aufbau des Organismus,* Der Haag, Martinus Nijhoff, 1934.

those subject-*dis*organizations and *dis*functions which are observable as anomalies of behavior affecting individuals and communities in their wider bionomic relations. In this biological expansion of the conception of man's behavior-processes, research into behavior-disorders will include in its function the organism's phylogenetic as well as its ontogenetic maladjustments. Accordingly the physician occupied with behavior-disorders will be enabled to deal directly with divergences or impediments in the subject-organization or total pattern of configuration not only of the individual but also of our wider human communities.

To this end it is necessary that in any investigation of man's behavior the individual who is investigating shall include without favor or affectation his own defective organization as an integral element within the group. Recognizing the social basis of behavior-dissociations as primary, the investigator will no longer be interested in those specimen neuroses that are merely symbolized in the defection of the individual. Abrogating his interest in phantastic clinical expositions he will no more look for the detached and outstanding "exhibit A" in the sphere of behavior-dissociations than he now seeks out exhibition cases in the field of tuberculosis or typhoid fever; but as with these disease manifestations, he will regard the neurosis as a community liability and will have recourse to those adjustments within the community or group as a whole for combating these community aberrations.

CHAPTER XI

BEHAVIOR MECHANISMS AND THEIR PHYLOPATHOLOGY[1]

THE experimental aim of phylobiology is toward such behavior training as will release the symbol-forming function of the cortex from complicity in the system of total reactions to which it now adheres as a purely restricted, socially projicient process. In this phyletic experiment based upon physiological behavior the purpose and aim is not to detach the affective item or instance from the single or specific symbol, but to demarcate completely the individual's system of symbolic affects from the system of his integral feelings as a total organism. It is, so to speak, to render unto the social symbol the things that are pertinent to the social symbol, and unto the physiological organism (with its neural, visceral, muscular and vasomotor tensions and releases) those patterns of intercommunication which pertain to the physiological organism.

Our accustomed position as psychopathologists in concentrating upon neurosis and crime as isolated phenomena is no longer tenable, not because of inaccuracy in our observations but because the frame of reference from which we observe is too restricted. If, instead of viewing behavior solely from the highly restricted basis of the partitive segment, we adhere to the broad phyletic frame of the organism as an integrated whole, we are compelled perforce to recognize all disordered behavior, of whatever form or degree, as but a single, isolated behavior-syndrome in a systematized complex of reactions that represent an imbalance in physiological function of the two organic systems—the partitive and the total. Accordingly, whether in ourselves or others, in our own

[1] Paper originally published in *The Psychoanalytic Review*, 1935, Vol. XXII.

community or nation or the nations of others, we shall wish to treat these conditions in the single individual, in the nation or the species, in mild or extreme cases, as neuro-physiological disorders of function.

Among students of individual behavior it has long been the accepted tenet that an understanding of abnormal processes is especially helpful in throwing light on normal behavior-reactions. While this method has proved to possess undoubted value, in recent years I have been led to adopt a principle that has completely altered for me this accepted procedure. Instead, my investigations have centred upon normal processes of behavior with a view to an understanding of their abnormal or deviate expressions.[2]

The outstanding normal behavior common to ourselves as physicians and psychiatrists is the behavior with which we are wont to approach abnormal behavior-expressions. I have in mind the very common, normal behavior-reaction among students of human behavior that is characterized by their application of psychic measures to abnormal behavior-manifestations. If from a background of bionomics or of man's "relational physiology" [3]

[2] Burrow, Trigant, "The Laboratory Method in Psychoanalysis—Its Inception and Development," *The American Journal of Psychiatry*, 1926, Vol V, pp. 345–355.

[3] "We are justified in regarding Réaumur's work on insects, published during the first half of the eighteenth century, as at the same time the first popular presentation and the starting point of modern behaviorism. It was known at that time as 'natural history' and its outlines were rather vague, but Isidore Geoffroy St. Hilaire in 1859 clearly outlined its scope under the name of 'ethology,' and Haeckel in 1866 and 1869 even more accurately defined it as 'Relations-Physiologie der Thiere,' though he called it 'oecology.' In 1888 Carl Semper designated it as the 'Physiologie der Organismen' to distinguish it from the 'Physiologie der Organe,' and in 1894 Burdon Sanderson published the following lucid statement:

"'Now the first thing that strikes us in beginning to think about the activities of an organism is that they are naturally distinguishable into two kinds, according as we consider the action of the whole organism in its relation to the external world or to other organisms, or the action of the parts or organs in their relation to each other. The distinction to which we are thus led between the internal and external relation of plants and animals has of course always existed, but has only lately come into such prominence that it divides biologists more or less completely into two camps—on the one hand those who make it their aim to investigate the actions of the organism and its parts by the accepted methods of physics and chemistry, carrying the investigation as far as the conditions under which each process manifests itself will permit; on the other, those who interest themselves rather in considering the place which each organism occupies, and the part it plays in the economy of nature. It is apparent that the two lines of inquiry, although they equally relate to what the organism *does* rather than to what it *is*, and therefore both have equal right to be included in the one great science of life, or

we analyze this attitude of "psychic" medicine toward abnormal behavior-processes, we find that the behavior of the physician toward the processes before him is restricted to his projective, exteroceptive zone of reactions; that in his relation to the behavior expressed by the patient the behavior of the physician is primarily a function of the symbolic, secondarily conditioned sphere of his organism.

With a view to a more comprehensive study of the organism's reactions than is permitted through man's habitual projective approach to them, it has been my effort to include in the total situation my own reaction as a total organism as from hour to hour various stimuli would arise in the daily living contact of my associates and myself with normal and neurotic individuals. It has been our effort to study under objectively controlled conditions our own total reactions to these stimuli as they constantly occurred socially among us—not our reaction mentally, not our judgment or opinion, but our reaction empathically, autonomically as well; not our reaction exteroceptively only, but interoceptively and as a total behavior-response. This total behavior-response has been the basic premise that underlies the development of the technique of phyloanalysis in its application to disordered reactions both individual and social.[4]

I have already indicated that the principle of behavior-analysis

biology, yet lead in directions which are scarcely even parallel. So marked, indeed, is the distinction that Professor Haeckel some twenty years ago proposed to separate the study of organisms with reference to their place in nature under the designation of "oecology," defining it as comprising "the relations of the animal to its organic as well as to its inorganic environment, particularly its friendly or hostile relations to those animals or plants with which it comes into direct contact." Whether this term expresses it or not, the distinction is a fundamental one. Whether with the oecologist we regard the organism in relation to the world, or with the physiologists as a wonderful complex of vital energies, the two branches have this in common, that both studies fix their attention not on stuffed animals, butterflies in cases, or even microscopical sections of the animal or plant body—all of which relate to the framework of life—but on life itself.'

"E. Ray Lankester in 1889 also stressed the importance of ethology but called it 'bionomics,' a term which has been little used. For many years the Germans have been employing 'Biologie' sensu stricto for the same subject, while French zoologists, following the lead of Alfred Giard, retained St. Hilaire's designation. Emery and Waxweiler speak of it as 'external physiology' and regard it as a preliminary or exploratory science destined eventually to be absorbed in physiology proper." Wheeler, W. Morton, Review of *Behaviorism* by John B. Watson, *The Quarterly Review of Biology*, 1926, Vol. I, p. 439.

[4] Cf. pages 146–147.

to which I find my work in phylopathology most closely analogous is that of the investigators whose neurological observations have emphasized the organism's reactions as functions of total, unified structures. This principle is indicated by the German observers in their use of the term *"Ganzheit,"* [5] and a similar tendency has been emphasized for many years by Adolf Meyer in his formulations respecting the integration of the personality as a whole.[6] But, as has been mentioned before, the parallel which is perhaps closest to our phylopathological investigations is to be found in the principles formulated by George E. Coghill as a result of his investigations of thirty years in the field of neuro-embryological behavior.[7]

In describing his studies of the neural growth of Amblystoma, Coghill in one of his papers briefly sums up the underlying principle of the organism's growth as "a progressive organization of the nervous system from the whole to the part." [8] It should be repeated that, in accord with this principle of neural growth in animals, the behavior of the organism develops through the individuation of partial action-patterns or reflexes within a primary total action-pattern, and that this total pattern expands normally and from the beginning as an integrated process. Discrete reflexes or partial patterns are individuations arising out of and within this primary total pattern and, as Coghill repeatedly emphasizes, these secondary, restricted functions are dependencies under the jurisdiction of the total pattern. In a recent paper Coghill reviewed the findings of his study of Amblystoma and explained in addition that the mechanism of partial or secondary

[5] Bertalanffy, Ludwig von, *Modern Theories of Development,* London, Oxford University Press, 1933.

Goldstein, Kurt, "Das Symptom, seine Entstehung und Bedeutung für unsere Auffassung vom Bau und von der Funktion des Nervensystems," *Archiv für Psychiatrie,* 1926, Band 76, pp. 84–108.

Schilder, Paul, *Brain and Personality,* New York and Washington, Nervous and Mental Disease Publishing Company, 1931.

[6] See note 2, page 249.

[7] Coghill, George E., "The Genetic Interrelation of Instinctive Behavior and *National Academy of Sciences,* 1930, Vol. XVI, pp. 637–643.

"The Structural Basis of the Integration of Behavior," *Proceedings of the National Academy of Sciences,* 1930, Vol. XVI, pp. 637–643.

"Individuation versus Integration in the Development of Behavior," *The Journal of General Psychology,* 1930, Vol. III, pp. 431–435.

[8] See note 6, page 177.

patterns, with their tendency toward independent autonomy, is essentially antagonistic to the mechanism of the total pattern.[9]

This neuro-embryologic principle of progressive organization from the whole to the part observable in lower vertebrates is important in the understanding of the behavior of man. It is especially important in the understanding of those aberrations of behavior known as the psychoneuroses.[10] Studying the reactions of the human organism as they occur in social groups, it has been possible, with the assistance of my associates, to isolate a partial action-pattern which we have found to be now systematized socially and which in its autonomous individuation bears an important relation to disorders of behavior both individual and social. In describing our investigations of this socially systematized action-pattern the experimental investigations of conditioned reflexes made by Pavlov and his students will prove an especially helpful starting point.[11] While with Coghill I do not regard the behavior of the organism as built up primarily of a sum of gradually acquired reflexes, nevertheless from the standpoint of analogy there are certain aspects of Pavlov's experiments which deserve special consideration because of their bearing on the nature of conflict within the human organism.

We are already familiar with the classical procedure employed in the experimental induction in an animal of a conditioned reflex. It will be recalled that in order to induce salivation in a dog, for example, it is customary that a bell, a tuning-fork or a metronome be sounded simultaneously with presenting food to the animal.[12] These special contrivances, however, are not necessary for the production of conditioned reflexes. The mere rattle of a dish may readily replace these laboratory instruments. But far more commonly, as we know, the spoken word is sufficient to condition a dog's response. The word "here!", accompanied by the presentation of food or a friendly pat on the head, affords an instance of such a casual conditioning stimulus. Similar word-conditioning stimuli familiar to us all are "fetch,"

[9] See note 17, page 189.

[10] White, William A., "Enlarging Responsibilities for the Physician," *The Journal of Nervous and Mental Disease,* 1934, Vol. 79, pp. 497–504.

[11] Pavlov, Ivan P., *Conditioned Reflexes—An Investigation of the Physiological Activity of the Cerebral Cortex,* London, Oxford University Press, 1928.

[12] Cf. page 194.

"carry," "lie down," "give your paw," etc. The instance has been cited of an especially apt shepherd dog that learned to respond with as many as four hundred word-conditioned reflexes.[18]

But it is important to note that, no matter what the number of their responses, animals never fashion these conditioned reflexes into a unitary system of autogenous or independently purposive reactions. Whatever the word-conditioned reflex with which the dog learns to respond at man's command, he does not use it in his relation to other dogs. In animals conditioned responses always remain socially discrete. They do not become systematized in the inter-individual relation of one animal to another. Dogs do not have a literature, a philosophy, an art or a science. In other words, unlike man, animals do not possess, as a result of their manifold conditionings, an autonomous system that permits self-education or mental self-improvement.

Man, on the contrary—I am speaking not merely of the separate, discrete individual but of man as a phylum—has learned to react not only to four hundred or even four thousand, but to an endless number of symbol- or word-conditioning stimuli. Furthermore, in the course of his evolution and in the specialization of the exteroceptive cranial segment into a symbol-forming mechanism, man has gradually concatenated these manifold stimuli gathered from the outer world into an autogenous system of self-activating processes whereby he "thinks." With his enormously complex system of symbols man may now employ these responses, which were first accidentally conditioned, for the most elaborate objective constructions. Through the use of mathematical symbols, he may, on a slip of paper, construct a bridge, a tunnel, a railroad or a skyscraper, and all this as a result of reactions that have been built up from a system of externally conditioned reflexes. This system of interchange built up of word-images or symbols I have, for convenience of designation, already called the partitive system in order to indicate the partitive or selective function of the symbol-forming mechanism as contrasted with the function of the organism as a whole.[14] As I said in first defining the term "partitive," this usage is convenient also because

[18] Warden, C. J. and Warner, L. H., "The Sensory Capacities and Intelligence of Dogs," *The Quarterly Review of Biology*, 1928, Vol. III, pp. 1–28.

[14] See note 7, page 179.

it indicates that the process referred to consists in the selection of a part or sign in replacement for the total object.[15]

In this symbol-forming mechanism extending throughout the phylum in the form of language we have an example of a partial action-pattern arising within the cortex.[16] Like other partial patterns it is a secondary individuation that subsists under the sovereignty of the primary action-pattern of the organism as a whole. With respect to this principle of the organism's primary pattern of growth, it is important to keep in mind that in man as in Amblystoma the total pattern is always sovereign. The symbol-forming apparatus, then, is not only a secondary mechanism with respect to the organism as a whole, but in connecting the organism with the external environment through the image, sign or symbol of an object or phenomenon, this mechanism is also a partitive one. In addition, this process represented in man's system of autogenous images—that is, man's thinking-process—expresses itself not only individually but inter-individually (intercortically) or socially.

Prior, however, to the acquisition of his symbol-system or of language, it must be recalled that man as an organism already possessed, of course, a total reaction-system with which he responded to the environment as a total behavior-process. Before the development of the partitively conditioned responses of the exteroceptive segment, man's organism responded reflexly as a total, unconditioned behavior-pattern. Responses to heat and cold, reactions of balance and locomotion, as well as the reflexes of nutrition and sex, are instances of the organism's total unconditioned responses. Thus in the reaction of the total organism we have to deal primarily not with extrinsic logic and ratiocination but with intrinsic function and integration, not with a symbolic, partitive, exteroceptive system but with an integrated, total, interoceptive system having its cotentive principle or its central constant in the primary total pattern of the organism as a whole. While the recognition of the priority of this total behavior-pattern of the organism is essential, it is not a question of returning to the primordial conditions of a Golden Age, a Garden of Eden

[15] Cf. page 113.

[16] Herrick, C. Judson, "The Evolution of Cerebral Localization Patterns," *Science*, 1933, Vol. 78, pp. 439–444.

or of still, existing primitive tribes. It is a question of permitting a basic, phyletic behavioral pattern to come into its own, a pattern that has been slowly evolving through countless ages and is still primary, still growing and expanding as an integrated process—and still sovereign.

But let us return to Pavlov's experiments.[17] Among the various modifications employed by him we have already cited that of differentially conditioned reflexes.[18] As we explained, under this differential control the dog was trained to salivate in response to the sound of a metronome having an oscillation rate of 120 beats a minute and not to salivate in response to a rate of 60 beats. It was found that with the approximation of these two rates of oscillation to one another beyond a certain limit, that is, decreasing the faster rate and increasing the slower, the dog became restless, manifested unusual muscular tensions, became suspicious, undependable, vicious, and in his marked defense-reactions, even attempted to destroy the experimental apparatus. In short, the animal's behavior disclosed symptoms which Pavlov and his students have described as definitely neurotic. The details of these experiments are quite complicated and apparently further controls may alter in certain respects the conclusions thus far reached; but at least they have established that a confusion, a conflict, an overlapping between two discrete conditioning stimuli may cause in animals obvious symptoms of behavior-disorder.[19]

[17] Cf. pages 276–277.

[18] Among the investigators most prominently associated with Pavlov in the use of this particular variation are N. R. Schenger-Krestovnikova ("Contributions to the Physiology of Differentiation of Visual Stimuli, and Determination of Limit of Differentiation by the Visual Analyser of the Dog," *Bulletin of Institute of Lesgaft,* 1921, Vol. III); M. K. Petrova ("Pathological Deviations of the Inhibitory and Excitatory Process in a Case of their Clashing." *Collected Papers,* Physiol. Lab., I. P. Pavlov, 1925, Vol. I, Nos. 2–3); and V. V. Siriatsky ("Pathological Deviations in the Activity of the Central Nervous System in the Case of Clashing of Excitation and Inhibition," *Russian Journal of Physiology,* 1925, Vol. VIII, Nos. 3–4).

We have already mentioned similar experiments upon children by Krasnogorski. See note 8, page 200.

[19] Additional experiments of Gantt in this connection are interesting. In these experiments he has brought out special aspects in the relationship not only between two conditioned reflexes but also between a conditioned and an unconditioned reflex.

Gantt, W. Horsley, "Effect of Alcohol on Cortical and Subcortical Activity Measured by the Conditioned Reflex Method," *Bulletin of the Johns Hopkins Hospital,* 1935, Vol. LVI, pp. 61–83.

In man, however, according to our findings there has come to be a too close approximation not of two discrete conditioned responses but of two *systems* of responses, namely, the extrinsic, partitive or logical system and the intrinsic, total or primarily integrated system; the one conditioned, the other unconditioned.[20] For the brain areas involved in the mechanism of affect-projection (a mechanism expressed chiefly in connection with man's word-conditioned reflexes) includes something more than the cortex and the special external senses related to speech. Because of the distorted empathic element in these social responses one must assume neurological entanglements that involve secondarily the older cerebral ganglia—the deeper thalamo-splanchnic system.[21] In accord with our experimental group-investigations of human reactions, there is evidence that in the course of man's development these two systems tend to impinge upon each other too closely, that the two systems tend to overlap, to crowd upon one another and thus to curtail the function appropriate to each. The result is that the social behavior of man as a race has within varying degrees become inconsistent, defensive, undependable, neurotic.

It has been my attempt to define in terms of internal neuromuscular alterations the overlapping and consequent confusion in function that have arisen in respect to these originally distinct neurological areas. My studies relate to the neural complicity that has been artificially set up between the cortical system with its projective, symbolic resultants and the thalamo-splanchnic system, between the brain and its external world on the one hand (exteroceptive system) and the brain and its internal world on the other (interoceptive system). However consistent the reaction of the organism may be within the domain proper to each system, a conflict of function has now arisen between these two systematized reaction-patterns. It is this neural, physiological complicity and conflict which in its acute incidence within the individual has been designated in psychiatric terminology as "the neurosis."

If we will examine the differentially conditioned reflexes in-

[20] Cf. pages 169–170, 200–201.
[21] Cf. pages 117–118.

duced in the dog and the neurotic behavior resultant upon the too close approximation in the animal of two opposed stimuli, we shall find that the neural disturbance which has been experimentally produced, although internal to the dog's organism, is, to judge by his behavior, not felt by the animal to be internal to him. On the contrary, the dog refers its discomfort and inhibition of function to the outer surroundings in which the conflicting stimuli arose. The dog, accordingly, manifests defense-reactions which are invariably directed toward the objects or persons composing the outer environment. In its reaction the dog's sensation, though produced by a conflict within its own inner processes, is referred by the animal to symbolic or exteroceptive causations.

Of course to man, who is experimenting on the animal, it is obvious that the dog's behavior is projected, that its external oddities of conduct are caused by a disfunction that is neural and therefore internal to the dog. But in man's reaction to the confusion and overlapping of the two conflicting systems within himself—the total and the partial behavior-patterns—he, no less than the dog, fails to refer his discomfort to its actual seat internal to his own organism. Being reflexly conditioned by stimuli arising from without, man too projects the occasion of his disturbance outside of himself. Being now exteroceptively, semiotically constellated, he too refers his irritation to external agencies and, like the dog, responds with mere outwardly directed defense-reactions.

For example, a man having become reflexly conditioned to react with a partial action-pattern which defeats rather than serves his constructive aims as a total organism, will quite misdirect his effort of readjustment. Let us say that he forms a purely fictitious and extravagant picture of himself as a sound and efficient business man, but that this partitive reaction is unsupported by his actual behavior. In his internal insecurity and self-distrust he develops suspicion toward his wife. He begins seeing motives in her which have no basis whatsoever in reality. He may assume that she has become recklessly extravagant when in fact she may be exercising unusual thoughtfulness and thrift. But the husband being wholly unaware of the conflict of patterns within himself

arbitrarily projects his conflict in "mental" (symbolic) fault-finding and quarrelsomeness toward his wife.

We have found that due to the artificially induced amalgamation between man's reflexly conditioned affects and the symbols or word-stimuli that have conditioned them, this outer symptomatology of man, like that of the differentially conditioned animal, is characterized by very extravagant behavior-inconsistencies throughout.[22] Instead of the primary pattern of man's organism preserving its sovereignty over his system of partial processes, we find that his partial processes—his externally conditioned or partitive responses—have gotten completely out-of-hand and that they are now exerting overtly a sovereignty over man's primary pattern of reaction. This tendency of the symbolic or semiotic reaction-pattern to overlap the organism's total pattern of reaction is an anomaly for which I have suggested the term semiopathic.[23] Such reactions are to be seen in our domestic infelicities, in our political and industrial conflicts, in international wars, as well as in the projections characteristic of hysterical and paranoid states.[24]

It should be realized, however, that defense-reactions are not by any means always recognizable by their antagonistic mien. As often as not their aspect is quite benign. A phyletic study of man's reflex social conditionings, and of his defense-reactions in accord with these conditionings, shows these reactions to be no less frequently clothed in the outer adornments of gentleness and suavity than in the severer trappings of hostility and attack. Our symbolic conditionings are to be seen quite as much in the domestic felicities of the home as in its infelicities, quite as much in our political hobnobbings and affiliations as in our dissensions and conflicts, quite as much in our international diplomacies and kowtowings as in the wars that nations wage against one another. Indeed the extent of the defense-reactions which exist within and about us in the empty obsequiousness of our smiles,

[22] Cf. pages 169–170 and 198–200.

[23] Cf. page 206.

[24] Burrow, Trigant, *The Social Basis of Consciousness—A Study in Organic Psychology*, International Library of Psychology, Philosophy and Scientific Method, London, Kegan Paul, Trench, Trubner & Co., Ltd.; New York, Harcourt, Brace & Co., Inc., 1927, pages 16, 130–131.

our flatteries and our acquiescences is such that none of us could bear to realize them except as we have re-acquired as individuals and as a race the support of the organism as a whole.

One of the outstanding symptoms of social man, due to the semiopathic shift of the organism's centre of balance from the total action-pattern to a system of partitive reflexes, is found in the behavior-contradiction through which man now tends to account for his affect on the basis of his logic, when upon examination it turns out that his logic is only to be explained on the basis of his affect. For example, it is implicit in man's behavior that he considers himself a total organism completely sovereign over such habitual projective behavior-reactions as his anger, his irritations, his prejudices and beliefs, his likes and dislikes, his secret and often petty motives of competition and gain, when all the while these partitive word-conditioned reactions are now, in their overt social expression, completely sovereign over man's system of response as a total organism. In this artificial re-routing of man's primary basis of motivation to the partitive pattern of reaction, and his resultant projection of mere affect —the outer expressions of which we see in industrial discord, in crime, in social disorder and unrest—man's course can only be one of neurosis and defense-reaction.

We are, of course, only too familiar with the defense-reactions (or resistances) observable clinically in our patients. We see again and again in their dreams as in their waking reactions the inseparable amalgamation between the reflexly induced affect and the word or symbol that induces it. But it may be experimentally demonstrated that an association between an exteroceptive incident or word-conditioning stimulus on the one hand and an emotional or affective reflex on the other is not limited to a special group of individuals classified as neurotic, but that it is characteristic of man throughout upon his present exteroceptive, symbolic level of adaptation.[25] Not only this, but the same defense-reactions, or resistances, which characterize neurotic subjects,

[25] In those fear-reactions of young children to animals which Watson's experiments indicate are directly due to training we have an example of the type of response to which I have referred as sign- or word-conditioned.
Watson, John B., "Studies on the Growth of Emotions," *Psychologies of 1925*, Clark University Press, 1926.

whether animal or human, may readily be induced experimentally in normal human communities.

In the absence, however, of objective experimentation with the reactions of human subjects in their total behavior-response, we do not recognize that there is in man a reflexly conditioned or partial reaction-system which is now overtly dominant among us, and that in its arbitrary autonomy this partial system is antagonistic to the reaction of man's organism in its total organic primacy.[26] This conflict and imbalance, as I have said, may be seen outstandingly in the ever-present defense-reaction whereby normal no less than neurotic individuals are at all times under compulsion to sustain with logic and ratiocination reactions that are conditioned through purely affective, wishfully determined associations.[27]

To invoke again the neuro-embryologic principle formulated by Coghill and expand it to its phyletic implications in man, our experiments with human reactions afford evidence that projective, partitive reactions occurring in the human species have become socially systematized into a phyletic partial pattern and that this partial pattern has now overtly assumed supremacy over the organism's total pattern of behavior as a phylum. Primarily the organism maintains its sense of equilibrium or its sense of bionomic balance and security by virtue of the integrity of the total action-pattern. But with the shift of the organism's bionomic constant to an exteroceptively conditioned system of reflexes, its primary pattern of response has acquired an entirely altered hook-up, and the proprioceptive and autonomic function of the organism as a whole is now throughout the phylum subordinated—not primarily, of course, but overtly—to the reflexly conditioned reactions of a partitive, exteroceptive system of behavior.[28]

[26] Cf. pages 114, 181–182.

[27] Holt, Edwin B., *The Freudian Wish,* New York, Henry Holt and Company, 1915.

[28] The work which Kempf has done in his studies of the autonomic functions throws interesting light on certain reactions of the organism in response to social and environmental stimuli.

Kempf, E. J., "Affective-Respiratory Factor in Catatonia," *Medical Journal and Record,* 1930, Vol. CXXXI, pp. 181–185. See also his "Physiology of Attitude-Emergence of Ego-Organization," *Medical Record,* 1935, Vol. 141 and Vol. 142.

Naturally the interest of physicians centres in a practical remedy for this situation of embarrassment and conflict within the human organism. If the outer manifestations of disorder and crime, of neurosis and social unrest, which now engage the interest and study of the medical and sociological world, are of one piece with the defense-reactions observable in our psychoneurotic patients or in the conditioned animal, and if these manifestations are an expression of an impasse that is really neurogenic and internal to the organism, physicians interested in problems of behavior will wish to discover a concrete, objective remedy for this maladaptation internal to ourselves as a race or species.

They will wish to discover some practical device whereby it will become possible to establish a basis of discrimination between the reaction characteristic of the organism in its total behavior-response and the reaction that takes place as the result of an habitual impingement of a partial reaction-system upon the primary total field. As the seat of the difficulty is internal to the organism, an important element in the technique requires that the investigator refer to his own internal sensations but that he preserve an attitude of objective inquiry consistent with his procedure in other scientific fields.[29] As far as concerns the individual experiment, the situation is roughly analogous to an ophthalmological examination in which a test card is presented to a patient in order to determine his capacity of vision. While the oculist controls the objective conditions of the examination, it must be left to the patient to discriminate beween the letters he can make out clearly and those he finds blurred. So with the two physiological reaction-fields confronting the phylopathologist and his internal capacity of discrimination between them.

Now it so happens that in the complex of reactions that constitutes the physiological pattern of the exteroceptive segment on the one hand and the total autonomic and proprioceptive pattern of reaction on the other, one special part or organ occupies a place which stands functionally midway between the two.[30] In the

[29] Work that is especially outstanding in the appreciation of internal sensations has been carried out by J. H. Schultz. (*Das autogene Training, Leipzig,* Georg Thieme Verlag, 1932.)

[30] Cf. page 267.

pattern-complex that makes up the exteroceptive, symbolic system of reactions, the organ of vision occupies physiologically an important position.[31] In the ocular tensions associated with word-conditioned mentation or symbolic perception the eye serves, of course, the function of recognizing an object or process to which the organism's exteroceptive attention has been drawn. These muscular tensions connected with the function of symbolic perception are, as we know, recorded in very fine eye-movements. According to Jacobson, "During visual imagination or recollection, the muscles that move the eyes contract, as if the subject were looking at the imagined object." [32] These eye-movements are a constant concomitant of the process of symbolic mentation, and, like mental processes, they occur in sleep as well as in the waking state.

But as we know, in the larger pattern-complex that comprises the organism's primary total action, the visual organ occupies also a no less central and important rôle. The eye, with its muscular system of tensions and strains, is of central significance in the organism's kinesthetic, stereognostic and general proprioceptive function. In maintaining the organism's equilibrium, in coordinating its relation to outer space and time, and in the adjustment of its general muscular tone and balance in respect to the outer environment, the eye and its appendages play an exceedingly important rôle. Because of this central position of

[31] Various experimental studies of eye-movements have indicated the rôle which these movements play in mediating the organism's exteroceptive adjustment to surrounding objects.

Stratton, G. M., "Eye-Movements and Visual Direction," *Psychological Bulletin,* 1907, pp. 155–158.

Dunlap, K., "The Complication Experiment and Related Phenomena," *The Psychological Review,* 1910, pp. 157–191.

Dodge, Raymond, "Fundamental Steps in the Development of Adaptive Behavior of the Eyes," *Journal of Genetic Psychology,* 1930, pp. 3–14.

The investigations of Magnus and his co-workers on the coördination of different postural reflexes have emphasized also the importance of the eye-movements in relation to the movements of the head and the total body.

Magnus, R., *Körperstellung,* Berlin, Julius Springer, 1924.

[32] Jacobson, Edmund, "Electrophysiology of Mental Activities," *American Journal of Psychology,* 1932, Vol. XLIV, pp. 677–694.

"Electrical Measurements of Neuromuscular States during Mental Activities; Evidence of Contraction of Specific Muscles during Imagination," *American Journal of Physiology,* 1930, Vol. 95, pp. 703–712.

Cf. also Watson, John B., "The Place of Kinaesthetic, Visceral and Laryngeal Organization in Thinking," *The Psychological Review,* 1924, Vol. 31, pp. 339–347.

the eye functionally between the organism's exteroceptive or partial action-pattern and its proprioceptive or total pattern of response, the organ of vision constitutes physiologically an organic integral that is common to both these systems. One would expect, therefore, that this organ common to the two systems—the exteroceptive and the proprioceptive—would be especially disposed to register whatever conflict or overlapping of function has been induced through a disparity of tensions between the two pattern-complexes. As we are well aware, even if a very small element is an integral part of a pattern-complex, the stimulation of this element is sufficient to excite a reaction throughout the entire pattern.[33] It is therefore not extravagant to expect that if we might modify the reaction of this integral element, however small, we should be able to modify also the reaction of the pattern-complex in which it is a functioning component.

As a matter of fact, one finds through actual internal observation that the organ of vision and its adjacent structures afford a significant clue in the effort to give sharper outline to the sensation of overlapping and conflict existing between these two reaction-patterns. In the contradictory and quite irreconcilable sensations of strain that coalesce at this point of juxtaposition between the two physiological patterns one finds a valuable entering wedge to the internal physiological conflict between them. One finds that in this point of coalescence between the two systems he is provided with a valuable clue for sensing the organism's behavior in respect to two differential systems of response that have become too closely approximated. The tensions of the eye in orienting the organism in respect to the environment symbolically or partitively possess a wholly different character from the tensions of the eye when responding as an element within a total system of kinesthetic balance and coördination. While the two types of tension characteristic of the visual organ differ from one another in their response to these two different functions of the organism—the partitive and the total—each type of eye-tension is, of course, consistent within its own domain. Between these two types of visual reaction there exists no essential disparity or conflict—not any more than the movements

[33] Cf. page 267.

performed by the tongue and lower jaw in speech interfere or conflict with their function in the process of digestion. Interference occurs only as the partial action-pattern belonging to the symbolic or partitive segment tends to reverse the primary behavior of the organism by dominating the total behavior-system to which it is subordinate. Under these conditions the organ of vision registers strain and discomfort because of its function as a common organic integral in these two conflicting behavior-systems.[84]

But it should be emphasized that our investigation of internal strains and tensions does not concern itself primarily with these internal manifestations as they become perceptible in this or that particular neuromuscular segment or body-part. They are concerned with subjectively perceptible tensions as they are related to the behavior of the organism as a whole. The sensations and reactions which tie up with man's symbol- or word-conditioned reflexes are not only inadequate to represent the organism in its total behavior-response, but they tend to occupy a position, physiologically, that is in direct opposition to the organism's total behavior. Through the gradual intervention of word-conditioned reflexes man is now subject to disordered somatic functions which, while widely operative socially, have not as yet been phyletically investigated and in consequence their generic significance has been completely overlooked. Medicine has failed completely to recognize the connection between the organism's phyletic dissociations and the incidence of somatic diseases. Be-

[84] It is interesting that there are discernible two distinct types of eye-movements corresponding respectively to the organism's two types of behavior-pattern. This phenomenon may be determined experimentally. If shortly after waking, provided the light is right—not weak and yet not too strong—one maintains the normal visual axis in a fairly steadfast position, it is sometimes possible, with the eyes closed, to locate a floating particle (*musca volitans*) in approximately the centre of the visual axis. Where there prevail reflexly conditioned, affective ruminations —where the partitive mode is uppermost—the movements of this tiny dark spot against the less dark "visual field" are jerky. But where the total unconditioned mode is dominant—where there is a suspension of affect-images—the eye-movements are such that the spot tends to move across the field in a sort of loop or parabolical curve. So that direct objective, exteroceptive observations of the eye-movements show that those which are under the direction of the organism's total pattern of behavior are slower, larger, and tend to take a somewhat circular or swinging course, while the eye-movements which are controlled by the organism's partial pattern of motivation are quick, fine, tending to take a course that is straight, and that may be described as darting or staccato.

cause of the importance of differentiating between the organism's total and its partial reaction-patterns as they affect the social and economic interchange of individuals and of peoples, man to man and nation to nation, our endeavor has been to centre our interest upon those sensations which belong to the organism in its behavior-motivation as a whole in contrast to those physiologically appreciable patterns which have been partitively or secondarily induced. May I say again that in speaking of partitive reactions in contrast to total reactions I refer specifically to those alterations internal to the organism of man which have developed in the course of his evolution through the substitution of image-affects or of *appearances* of feelings in place of feelings themselves—a process concomitant to the introduction of the appearances (or symbols) of objects in place of the objects for which they stand.

It is, then, upon the imbalance of the internal tensions belonging to the two differentiated systems of response—the total systemic reaction and the partial or symbolic reaction—that my associates and I have been led to concentrate our investigations. In our effort to account for disorders of behavior now commonly regarded as primarily mental or psychic, we have directed our attention upon this inner physiological discrepancy of function rather than upon discrepancies and conflict in the field of external images or ideas.[85]

The department of ideas which are of interest to the physician in his study of a patient—the department of correct ideas or reports as registered by his symbolic senses—relates on the one hand to the objective nature and condition of a patient's specific organs and tissues; and on the other it relates to a domain that is quite different from that of a physician's consideration of a patient's specific organs and tissues. For example, the neuropsychiatrist, as a student of behavior, concerns himself not alone with the correct report of his senses regarding the structure

[85] It is hardly necessary to state that the experimentation referred to here is only in its beginning but it has opened a field of investigation which in its bearing upon the organism's disorders of behavior gives promise of fruitful reward.

Burrow, Trigant, *The Structure of Insanity—A Study in Phylopathology*, Psyche Miniatures, London, Kegan Paul, Trench, Trubner & Co., Ltd., 1932, page 32.

and function of organs or tissues, but, as I said in the beginning of this chapter, he is concerned no less with the correct report of his senses or with his ideas as they relate to the senses and ideas or to the mental life of his patient. One of the functions, then, of the neuropsychiatrist consists of the study of neurological man, the other of ideational or sensational man.[36] But in both functions, be it noted—in his function as psychiatrist no less than as neurologist—the physician employs a method of study that is projective, mental, ideational. That is, the structures coming under observation on the one hand, and the ideas or sensations coming under observation on the other, are equally observed mentally or symbolically by him.

There are, however, behavior-processes within man which *ideas* about man do not reach, nor are they reached through ideas regarding specific organs and tissues of the body. In this domain of processes of which I am speaking the physician's symbolic senses or ideas are not adequate to a correct report of the data at hand. In the cortical, ideational relation of the psychiatrist to the patient, the symbols employed by his external senses are apt and handy tools for assisting his relationship to the patient as an observable item in the external environment. As far as concerns the notation of a patient's outer appearances, particular mannerisms or personal interests these ideas are undoubtedly of value in assisting the physician's observation or correct symbolic report of, as well as rapport with, the patient. But this projective equipment, contrary to prevailing habits and beliefs, stops short and leaves a physician completely stranded in face of the phenomena expressed in those sensations and reactions which are common and internal to the patient's organism as well as to his own. In short, the feelings of men as elements composing the organism of man as a phyletic whole, and the direction, adjustment and control of these feelings which are common and generic among us, present a task that is wholly inaccessible to man's symbolic or projective method of observation. Yet these are the methods which up to now represent the sole attainment

[36] In the study of the conceptual life of man I am not overlooking the important contributions of philosophers and educators—of William James, John Dewey, James Mark Baldwin, and others.

of man's culture in respect to the observation of processes internal to the human organism.

Psychology, psychiatry and psychoanalysis have contributed materially to the accumulation and coördination of exteroceptive data, and in doing so have thrown important light upon symptoms or part-functions that bear upon the problem of disordered behavior in the human subject.[37] Likewise, the animal experimenters have contributed no less significantly in their observation of lower organisms in their total behavior-reactions. The need would now appear to lie in the direction of combining these two fields of study through man's direct grasp of the problem of his own behavior as a total organism, and specifically of the significance of those internal patterns and alterations which inhibit his healthy functioning as a race or phylum. These impediments, according to our investigations, indicate a physiological disparity between an action-pattern that is partial or reflexly conditioned through socially systematized words or symbols and an action-pattern that is the expression of the organism in its total unconditioned response.

[37] Woodworth, R. S., *Contemporary Schools of Psychology,* New York, Ronald Press, 1931.

CHAPTER XII

ALTERING FRAMES OF REFERENCE IN RELATION TO MAN'S BEHAVIOR[1]

ALTERING frames of reference are a prerequisite to scientific progress. Not what we look *at* only but what we look *from* is decisive in determining what we shall see. As physicians we used once upon a time to look at the surface of things and, whatever the symptom or index, that was all we thought there was to see. The clinicians of an earlier period, noting the presence of temperature, were content with the observation that the patient lay sick of a fever. This was the obvious index or surface appearance and this surface appearance was, from an unstabilized, conventional basis, the all-sufficient indication. Even to-day, where it is a question of man's own behavior-disorders, the symptom or index is uppermost, for it is still the habit of medicine to regard these behavior-manifestations from the same superficial, unstabilized basis of inquiry. According to the typical account an individual is depressed, he shows instability of mood, economic undependableness, a proclivity to lying or thievery; he presents exaggerated narcistic components, an inverted type of sexual adaptation, habits of forgetting, a disposition to dream-states, a trend toward aggressiveness or passivity, an expanded egoism with ideas of persecution, a marked tendency to withdrawal and ingrowth, perhaps even a suicidal or homicidal urge—and one might go on *ad infinitum* citing these symptomatic surface appearances, these external indices of the patient's disordered condition.

Consistent with this remote, external basis of inference from which medicine still looks at a patient's disordered behavior-

[1] Paper originally published in briefer form in the *Journal of Social Philosophy*, 1937, Vol. 2.

processes, the psychopathologist classifies these various conventional symptom-complexes as "mental or emotional disturbances" and assigns to them Greek or Latin designations which are correspondingly archaic and remote: paranoia, schizophrenia, dementia praecox, dypsomania, nymphomania, homosexuality, autoerotism and so forth. And characteristically these symptoms, these surface appearances, with their remote classical nomenclature, are still regarded to-day as constituting the patient's actual disorder.[2] These symptomatic, outer manifestations which are but the index of disease are regarded as constituting the disease itself, just as in a not too distant yesterday the various infective, allergic, metabolic and glandular diatheses of which a patient gave evidence were regarded only in their symptomatic aspects and were accordingly summarized under superficial categories which were as little to the point as the once quite obvious surface observation that the patient lay sick of a fever.

But with the adoption of chemical analysis, of bacteriological technique, and with the use of the microscope, the X-ray and other laboratory aids, there has been introduced into medical observation the element of objective depth and dimension. With the introduction of this *intra-organic* perspective or of the element of depth and dimension, there was introduced concomitantly into medical observation an altered frame of reference. Directing our observations upon elements and processes that lie below the surface or *within* the organism, this altered frame of reference, as opposed to conventional surface inquiry, has now become the criterion of the medical sciences. In respect to febrile and kindred organic processes we no longer confine ourselves to the mere surface appearance or index but, through our growing appreciation of depth and dimension, we have acquired an ability to observe a patient's *internal* disorders of function. Our increasingly controlled observation has been coterminous, of course, with our growing acquaintance with the process observed. That is, our deeper knowledge has been achieved through the symbols or indices we have attached to the elements and structures into which our observation has penetrated. But to apply this intra-organic method of observation, which is the essential meaning of objective

[2] Cf. pages 108–109.

inquiry, involves an intra-organic alteration in ourselves. It means not only that we see what is inside but that we have become newly equipped, inside-seeing persons. *It means that by virtue of a premise which presupposes depth and dimension not only have we acquired a facility for taking account of the internal process at which we look, but that also there has automatically come about an alteration in the internal basis from which we look at it.* Thus in respect to a diseased organ or part, medicine has steadily progressed to a fundamentally altered frame of reference in the interpretation of the phenomenon or process observed by it.

There is something else, however, besides the diseased organ or part. There are also processes within us that constitute the physiological substrate of what we ordinarily experience as feeling and thinking, or the life of the organism in action.[3] These processes internal to the organism involve the organism as a whole, and where such processes are in greater or less measure impaired there exists disease of the organism as a whole. Impaired reactions which are internal to the organism as a whole—reactions which in their surface appearance are commonly described as mental disorders—affect the expression of man's total behavior in relation to the external environment. Recognizing that a principle of depth and dimension has made possible our understanding of processes occurring in a part or organ, we need now to apply this same principle in our understanding of man's total behavior-reactions. For what is seen to constitute the processes and functions occurring within a part or organ in contrast to its surface appearance has its counterpart in the internal alterations of the total organism.[4] But these internal alterations intrinsic to the behavior of the total organism are man himself, and man can only acquire an acquaintance with his own intrinsic behavior-processes through an appreciation of himself by himself. He can only

[3] Cf. Adolf Meyer's use of the term "ergasia." "Genetisch-dynamische Psychologie versus Nosologie," *Zeitschrift für die gesamte Neurologie und Psychiatrie,* 1926, Vol. 101, pp. 406–427.

See also Heinroth's usage, "Ergastik." Heinroth, J. C. A., *Lehrbuch der Seelengesundheitskunde,* Leipzig, F. C. W. Vogel, 1823, Vol. 1, pp. 432–473, Vol. 2, pp. 93–111, 306–342.

[4] In speaking of the total organism one should not omit mention of the experimental observations of the neurologists. From the point of view of these concrete researches I should like again to call attention especially to the laboratory work of George E. Coghill on neuro-embryologic growth in Amblystoma, and in

acquire an appreciation of these internal alterations through an internal acquaintance with his own physiological processes and their pathology. It would seem logical, therefore, that the dimensional observation which has been achieved by man as an outside observer in respect to the various parts existing within the individual organism be now extended to the study of those behavior-reactions, individual and social, which affect the total organism of man from within.

With a view, then, to the application of an intra-organic technique in the study of man's intrinsic behavioral processes and their maladjustments, I should like specifically to depart from our customary basis of interpretation represented in our clinical

particular to his differentiation between the organism's total action-pattern and its partial action-patterns as this differentiation bears upon animal behavior.

Coghill, George E., "The Genetic Interrelation of Instinctive Behavior and Reflexes," *Psychological Review,* 1930, Vol. 37, pp. 264–266.

"Individuation versus Integration in the Development of Behavior," *The Journal of General Psychology,* 1930, Vol. 3, pp. 431–435.

"The Structural Basis of the Integration of Behavior," *Proceedings of the National Academy of Sciences,* 1930, Vol. 16, pp. 637–643.

"The Biologic Basis of Conflict in Behavior," *The Psychoanalytic Review,* 1933, Vol. XX, pp. 1–4.

Outstanding among the investigations that bear upon the behavior of man's organism as a whole and its disorders of function is the experimental work of Cannon, Goldstein, Herrick, Hess and Lashley.

Cannon, Walter B., *The Wisdom of the Body,* New York, W. W. Norton & Co., 1932.

Goldstein, Kurt, "Zur Frage der Restitution nach umschriebenem Hirndefekt," *Schweizer Archiv für Neurologie und Psychiatrie,* 1923, Vol. XIII, pp. 283–296.

"Die ganzheitliche Betrachtung in der Medizin," *Einheitsbestrebungen in der Medizin,* Dresden und Leipzig, Verlag von Theodor Steinkopff, 1933, pp. 143–158.

"Kritisches und Tatsächliches zu einigen Grundfragen der Psychopathologie, im besonderen zum Aphasieproblem," *Schweitzer Archiv für Neurologie und Psychiatrie,* 1934, Vol. XXXIV, pp. 2–40.

Herrick, C. Judson, *Neurological Foundations of Animal Behavior,* New York, Henry Holt and Company, 1924.

"Factors of Neural Integration and Neural Disorder," in *The Problem of Mental Disorder,* edited by Madison Bentley, New York, McGraw-Hill Book Company, 1934.

Hess, W. R., *Über die Wechselbeziehungen zwischen psychischen und vegetativen Funktionen,* Zürich, Orell Füssli Verlag, 1925.

Teil und Ganzes im Organismus, Zürich, A.-G. Fachschriften-Verlag, 1933.

Lashley, Karl S., *Brain Mechanisms and Intelligence; A Quantitative Study of Injuries to the Brain,* The University of Chicago Press, 1929.

"Basic Neural Mechanisms in Behavior," *Psychological Review,* 1930, Vol. 37, pp. 1–24.

The actual experimental work of these investigators as it bears upon the function of the organism as a whole is of particular interest to my associates and myself because of the experimental basis upon which our own investigations rest.

images or indices of behavior. With a view to giving depth and dimension to our observations of human processes I should like to abrogate the customary frame of reference which, relating solely to outer symptom or appearance, approaches the problem of man's behavior from what we have become socially habituated to *think* about it. Putting aside our customary opinions or mental interpretations of behavior, I should like, instead of regarding behavior in its symbolic, outer appearances, to proceed on the basis of our own reactions as total organisms responding to total environmental stimuli. In order to appreciate the altered frame of reference requisite to such an inquiry, it may be well to recall briefly how very different are our present symbolic behavior-relations from the total space-time relations of man's organism to the surrounding environment.[5]

In the natural state of man, as of other animals, his adaptation to or his appropriation of the materials of the environment is accomplished through the organism's internal coördination as a whole to the whole object or condition existing in relation to it. If the organism is cold, it so adjusts its vasomotor system as to become warmer. If fatigued, its external muscular adaptation is such as to bring about the required body rest. If the organism experiences hunger, it restores its body state through the proper intake of food, and so forth. In this way there is the continual adjustment of the organism to a central constant whereby the body with its organs and functions is maintained as a unit in a state of equilibrium.[6] The central constant or coördinative mechanism that adjusts the organism as a whole is, of course, a condition which is intrinsic to organisms throughout the species, and is a reaction-process that is identical throughout the group. This physiological to and fro, this delicately poised mechanism that preserves the balance of the organism as a whole, is the underlying principle of its healthy coördination to the conditions of life and in this primary bionomic function there is represented man's total conditioning to the total environment about him.[7] For

[5] Cf. pages 223, 238, 241.

[6] How narrow is the margin of safety in regard to the maintenance of the equilibrium of certain functions may be seen from examples given by Walter B. Cannon in his paper, "The Significance of the Emotional Level," *The Journal of the Missouri State Medical Association,* 1934, pp. 177–184.

[7] Cf. pages 162–163.

convenience of designation I shall refer to this total coördinative function as the organism's *orthogenic* mechanism.

With the introduction, however, of the symbol or sign, with the use of a code or of language, the significance of the outer object was shifted from its original bionomic meaning as a whole to the meaning recorded through the correlative function of the special projective senses—chiefly the eye and ear—in conjunction with phonation and the production of speech.[8] Through this mechanism the meaning of the object as a whole was shifted to a specific part-feature or part-expression of the object as it appeared symbolically to a special part (or combination of sense-organs) of the head.[9] By virtue of the concomitant specialization of the cerebral segment in the function of phonation, this symbolic meaning became socially interlinked among the individuals throughout the species.[10] With this shift of interest from the actuality of the whole object to the part or symbolic appearance of the object through the isolating or signalizing of some special feature of it, not only the meaning but also the interest or feeling which originally inhered in the organism's primary response to the object itself now became attached to the mere symbolic appearance, to the organism's mere index or vocal articulation of the object. The result, therefore, has been not only the substitution of *part-impressions* of an object in place of actual contact with the object itself, but the substitution of *part-feelings* or *affects* in place of the total feelings with which the organism natively responds to the object as a whole. In contradistinction to the total or orthogenic function of the organism in relation to its object I shall call this part-function of the organism its *homogenic* mechanism.

In this transition from total actuality to the socially projected item or image that has marked man's invention of the symbol or of language—the introduction of man's psychic systematization—there automatically occurred a shift in man's bionomic frame of reference that involves his total space-time relation to the outer world. For in this shift or transposition in the organ-

[8] Herrick, C. Judson, "Behavior and Mechanism," *Social Forces*, 1928, Vol. VII, pp. 1–11.

[9] Cf. pages 115–116.

[10] See note 10, page 114 and note 29, page 141.

ism's primary relation to the outer world of objects there has been substituted for the organism's basic depth and dimension a code or system of external signs or indices that is organically dimensionless.[11] The result is that to-day the life of the organism in action as expressed in our thought and feeling is to a large extent a mere cortical, symbolic denotation which quite precludes physiological experience or feeling as it was originally registered within the organism as a whole. This altered bionomic outlook, this morphological shift in the organism's bio-physical frame of reference involves, as I have said, the internal processes of man as a race, and there is required an adjustment of our own internal processes if this transposition internal to ourselves is to be brought into clear perspective or into the total objective definition requisite to a solid-dimensional appreciation of it.[12] In order to acquire an internal sense of the practical influence of this shift in bionomic adjustment as it affects man's adaptation as a whole to the immediate object or environment as a whole we shall have to return to a study of the primary elements that enter into this alteration in man's bionomic function.

We are already familiar with Pavlov's experiments with con-

[11] Cf. page 231.

[12] It is the absence of this qualitative test, this objective *sine qua non* of all scientific procedure, that has laid psychiatry open to such ready ridicule on stage and screen, as well as in literature. Not that these travesties disclose the least discernment on the part of their perpetrators. In every instance the caricaturist reflects himself equally with the caricatured. In a social charade that reflects a world-wide neurosis it could not be otherwise. Where, as is the case with our normal criteria of behavior throughout, there are lacking qualitative values and hence the possibility of a quantitative measure of them, the conditions of observation are always arbitrary and uncertain. Odette Pannetier thought it very chic to secure and carry through a bogus interview with Freud and Federn (she *will* call him "Fedren"—psychoanalysts take up the scent!), not recognizing that she herself was no less hoodwinked by her ruse than her consultants, that in the artificial social relationship of psychoanalyst and patient both parties, even in the presumably bona fide analysis, are equally pulling the wool over their own eyes, and necessarily so. (Pannetier, Odette, "Appointment in Vienna," *The Living Age,* 1936, Vol. 351, pp. 138–144.)

No, the "psychic" school of behaviorists have not recognized by a long way that their procedure rests upon a partitive (partial) basis of motivation. They have not recognized that there is the same reversed (index) conditioning or pseudo-motivation lying back of their "interpretation" of "the unconscious" as has activated this same unconscious in the patient himself. (See "Our Social Evasion," the author's presidential address at the Midyear Meeting of The American Psychoanalytic Association, December 27, 1925, *Medical Journal and Record,* 1926, Vol. CXXIII, pp. 793–796, and, in the same vein, "Speaking of Resistances," *Psyche* (London) 1927, Vol. VII, pp. 20–27.)

ditioned reflexes.[13] In these experiments we have seen how a dog may be conditioned in its response by introducing a quite extraneous, mechanical stimulus along with the stimulus that naturally produces a response in the animal.[14] We have seen how, following the sounding of a bell or a metronome simultaneously with the presentation of food, the mere sound of the bell or metronome thereafter possesses sufficient affective coloring to induce in the animal the reaction of salivation. Through this same technique a dog may be induced to salivate not only in response to a mechanical sound but also in response to the spoken word, and through this same procedure a dozen or more originally inert stimuli may be artificially linked with the salivating response. In this reflexly conditioned reaction of the dog to a bell or a word following, let us say, the simultaneous presentation of meat to the animal—a reaction which Pavlov described as "psychic"—we have an example of an organism's response to the symbol or index in its elementary cortical form.

Already it will be seen what it is I am driving at in employing the analogy of the index-conditioned animal. In the reactions induced in the dog in response to a vocal sound or word we will recognize the parallel to the conditioned or index reactions stimulated inter-individually in man by his own vocal gestures of speech, and we will appreciate the situation that has been created socially by this verbal type of index-stimulus and interchange among us. It is a far cry, though, from this elementary symbol-reaction in the dog to what are now man's wide-spread reactions to verbal and gestural stimuli—stimuli and reactions that represent to-day man's widely conditioned response-interchange socially in substitution for the immediate reaction of his organism as a whole to the object as a whole. Indeed so far remote from its elementary cortical origin is man's symbol-system to-day with its highly complex and universally operative application socially that the experiment with the single dog is really too simple. We shall require as a comparative test some process intermediate between the reaction of the individual dog to a mere mechanical stimulus or vocal gesture on the one hand, and the highly elaborate system

[13] See note 11, page 276.
[14] Cf. pages 169, 198–199, 276.

of symbolic reactions now represented in the behavior of man as a social organism on the other. We shall have to imagine the situation in which, instead of the metronome or verbal stimulus, a characteristic vocal gesture or sound induced in one dog produces a characteristic and invariable vocal sound or other reaction in another dog. Or to make our analogy more consistent, let us take a still more complex situation. Let us imagine an experiment in which a cry or gesture artificially induced in a selected dog is made to condition specific reactions in a number of other dogs. Our hypothetical experiment will have to assume also that a cry or gesture from each of the dogs is, in turn, made the inciting stimulus to characteristic responses in the remaining dogs. Now if the experimenter should withdraw and the dogs thus inter-individually conditioned should, one after another, accidentally reproduce the stimuli severally assigned them, the individual animals would now severally induce reactions interchangeably among one another as a social group. So that according to our experimental set-up, when one dog whines, let us say, the other dogs, in accordance with their conditioning, quiver with fear. One barks and the others respond with an affectional wagging of their tails. A third yawns and the rest unflesh their teeth in an obvious reaction of defense. All of these behavior-processes—stimuli and responses—represent reactions which intrinsically are, of course, wholly unrelated biologically.

While from a laboratory view-point such an artificially constructed social or group experiment as we have described among the dogs would, as regards its practical set-up, present insurmountable difficulties due to obvious economic and physical limitations, at least in theory the procedure cited is not at all to be excluded physiologically. As a matter of fact, all animal training is animal conditioning. The dog that follows his master into the field and "points" is artificially conditioned to do so. He does not rush into the field and, like a beast of prey, impulsively seize his game. He is affectively conditioned to "set" his game. So that such mutually conditioned reactions as one might artificially produce in the dogs would not be so unusual as may appear. Besides, as we know, dogs and other animals are naturally stimulated to reactions proper to their kind by means of the characteristic

sounds or vocal gestures produced by other individuals of their species. Of course we are not for a moment suggesting that these sounds represent symbols in the sense in which man has come to employ the symbol. These spontaneous gestures of the animal, whether as stimulus or response, are reactions expressive of the organism as a whole. We see this behavior in the call of one bird to another, particularly in the mating season.

Our hypothetical experiment, then, which assumes that a cry or gesture from each of the selected dogs is made the inciting stimulus to characteristic responses in the remaining dogs is not, after all, far-fetched. Nor is it too far-fetched to assume that if the experimenter withdraws, the dogs thus inter-individually conditioned might, one after another, accidentally reproduce their severally assigned stimuli and that the individual animals would now severally induce reactions interchangeably among one another as a social group.

In this hypothetical situation—in the artificial system of behavior represented by the dogs as a community or group—reactions have been produced which now act as stimuli or indices to other organisms. These arbitrary stimuli or indices have become automatic and effective within the group, producing conditioned responses inter-cortically or socially among the animals throughout. In other words, reflexes have been produced in the dogs through the agency of inter-individual stimuli which, like the metronome in the experiment with the single dog, are primarily inappropriate to call forth such reflexes. Moreover these responses are social—they represent inter-individual reactions to sounds and gestures, and these reactions along with the sounds and gestures which elicit them now occur among the animals wholly automatically or unconsciously, as we say. In accordance, therefore, with the conditions of the experiment, we have introduced among the dogs a system of interreactions which is biologically new and represents a group or inter-individual reflex. These symbolic, "psychic" responses, however, are extra-organic in the sense that they are not integrated within the organism's primary principle of motivation. Nevertheless, these newly acquired symbol-reactions, notwithstanding that they are conditioned or extra-organic, have become experimentally generic for the animals thus

conditioned. *These partitive reactions have become generic even though they are not integrated within the organism's primary principle of motivation.*

The generic situation I have indicated requires to be weighed very carefully. Being ourselves affect-elements in a phylogenetic dissociation which we are endeavoring to make objectively, physiologically understandable, it is extremely difficult to give adequate formulation to the phylogenetic principle involved. The writer, as has been said, is fully in accord with the principle laid down by Coghill in respect to lower animal forms—a principle which posits the primacy of the organism's total action-pattern to which subsequent partial patterns are normally subordinated. The partial behavior-reactions, however, which my associates and I have emphasized in their relation to the organism's basic behavior have to do with the habitual reactions of man, with the behavior of observer and experimenter, with the behavior of the student himself. These reactions consist of affect-systematizations which exist socially or inter-cortically in relation to the phylogenetic organism of man as a whole. For in man there has arisen an extraordinary and wholly anomalous situation biologically. There has occurred in us as a species a situation that is the direct counterpart socially of the dissociation of hysteria in the individual. In man there has occurred the organically extraneous enactment socially or inter-cortically of secondarily acquired reflexes or partial action-patterns, and these artificially enacted patterns have remained purely symbolic or extra-organic. That is to say, within the species man there has developed the spurious phenomenon of part-functions or partial action-patterns which are quite disparate and antagonistic to the total organism's primary motivation as a whole. In this mechanism a *system* of outwardly portrayed *semblances* of motivation or behavior has replaced the physiological primacy of the organism's generic behavior.

By the term "generic," then, as used in reference to the experimental animals, it is understood that as a result of the technique employed there has been introduced among them a radical modification in the animal's mode or medium of inter-individual interchange, and this modification extends quite generally through-

out the group. A restricted, partial or symbolic lamina of contact and communication, having become established as an organic variation among the dogs, now allows the animals to react to one another upon a wholly new segmental plane—that is, upon a secondarily improvised inter-cortical plane. Where formerly the reactions of the dogs to one another represented a total pattern of response, now, through the substitution of the restricted function of a partitively or symbolically conditioned zone or segment, the response of the animals socially to one another represents a partial pattern of reaction. It cannot be too strongly emphasized, however, that this plane is, throughout, a spurious, epiphenomenal and socially dissociated plane of interreactions.

But let us examine our procedure somewhat more closely. We have seen that in the dogs, which according to our hypothetical experiment we have now conditioned as a group, there is the arbitrary interception of the organism's reaction to the total environmental object and, instead, the reaction is now elicited by a purely pseudo- or index-stimulus. Not only this. In addition a purely partial or index reaction has been substituted for the organism's total physiological response. This has been accomplished through the artificial amalgamation within the organism of two phenomena as completely disparate objectively as a metronome and a beefsteak. As a result, then, of the association of two such objectively dissimilar stimuli, the one vital the other inert—the one a primary physiological stimulus, the other a mere sign or index—the secondary, inert stimulus or index causes a reaction appropriate only to the first or vital stimulus, and the resultant complex of responses represents a socially partial or partitive reaction-pattern.

Of course every one knows very well—so well indeed as to take it for granted—that in their efforts to condition animals not only the psychological experimenter but even the animal trainer begins with some such basic reaction as the hunger instinct. Nevertheless it is important to emphasize that the successful conditioning of an animal must invariably proceed from the primarily unconditioned total-action basis of the animal's behavior. It cannot be too heavily stressed that in respect to man's feeling-life there is

no conditioning that does not invade the original basis of the total organism—the organism's primary pattern of behavior. So that whatever the conditioned reaction, where this reaction assumes supremacy it invariably represents the anomalous situation of a part-feeling or a partial reaction-pattern artificially *educed* from this primary basis of the organism's motivation.

As the partial pattern of the reactions that mark the response of the organisms in the experiment cited is inter-individual, intercortical, such a secondary partial pattern of reaction is, as I have said, potentially generic for the species in question. In this innovation of inter-individually stimulated partial reaction-patterns through the arbitrary employment of the inert symbol or index, the juxtaposition of two disparate stimuli acquires an artificial union within the organism such as is completely excluded in the objective world lying outside of the organism. In Pavlov's dog we saw that two phenomena which cannot be assimilated environmentally—a bell and a biscuit—may become artificially assimilable and united within the organism through the cortical stimulus or index which mediates symbolically between them.[15] But this union within the organism of objectively dissimilar stimuli —of a mere inert sign or index and a primary physiological stimulus—is comparable to the introduction of a foreign body into an otherwise integrated physiological system. In other words, *a partial reaction has been artificially foisted upon the total organic pattern the while it has remained partitive and extraneous to the organism's integral configuration.* The result is an overt transformation of primary reactions or feelings into mere index-feelings or affects—a phenomenon that is pathological both ontogenetically and phylogenetically. May I repeat, it is because this innovation of a primarily unassimilable partial reaction-pattern is inter-individual, that the pattern-reaction induced in our hypothetical experiment is potentially generic for the species in question.

The group-interreactions established among the animals we have cited offer, it is true, only the commodity of a purely pictorial illustration. But however malapropos it may seem, this excursion into the laboratory of animal experimentation is not unrelated to

[15] Cf. pages 298–299.

the immediate problem of human behavior-disorders. The experimental situation which we have constructed in a hypothetical laboratory of animal experimentation is, according to our observations in group-analysis, precisely the situation that has been produced spontaneously in nature's laboratory of experimentation as it has arisen accidentally in the course of man's evolution as a species.[16] I refer to the actual substitution in man of the organism's symbolic or part function in place of its reaction as a primary integrative process—a symbolic function which takes the place of the organism's reaction as a whole when it responds to the sign or word in lieu of the primary stimulus inhering in the object itself. This behavioral shift in the organism's motivation, affecting both its receptor and effector functions, constitutes the artificially improvised frame of reference from which social man now looks at and appraises the world of external phenomena upon a purely mental or symbolic basis.

To go back to our animals, if in the illustrative experiment the conditioned or partial patterns of response of the dogs to one another should come to be their habitual or dominant behavior-motivation, such conditioned or partial patterns would assume overtly a priority over the animals' total behavior-patterns—a phenomenon that has been demonstrated again and again in our experiments with human groups. In this behavior-modification presented within the group we really have the equivalent of the situation to which Freud, though in a wholly different context, long ago drew attention when in his psychoanalytic work he noted the presence in the individual patient of an invariable linkage between the affect and the symbol, and recognized the extent to which this artificial linkage dominated the personalities of these patients.[17] Though its biological import has hardly received adequate recognition at the hands of psychiatrists, this observation of Freud's constitutes the very hub of psychoanalysis.[18]

This phenomenon through which the organism of man tends predominantly to short-circuit its primary empathic reactions into mere cortically conditioned responses is not a modification

[16] Syz, Hans, "Socio-Individual Principles in Psychopathology," *The British Journal of Medical Psychology,* 1930, Vol. X, pp. 329–343.

[17] Cf. pages 144–146.

[18] Freud, Sigmund, *Studien über Hysterie,* 2nd edition, Vienna, Deuticke, 1910.

in function that has been artificially induced from without, nor is it one that is restricted to a special pathological type of personality. Phylobiological studies show that this amalgamation of the affect and the symbol is a phenomenon that has arisen accidentally with the evolution of the human species and that this emergent behavior-process extends throughout the race of man as a whole. They show that partial or conditioned patterns of reaction present not a mere clinical episode but a social phenomenon in which secondary processes tend generally to supersede the organism's primary basis of motivation.[19] By virtue of these secondary processes two phenomena which are completely disparate and unrelated outside the organism may, as we have seen, be united or merged within the organism. This union into a partial pattern that is independent of the organism's primary pattern of motivation I have for convenience called a partial or false mergent, while the natural response of the organism as a whole to the object as a whole I have called a total or true mergent.

This distinction recalls again the reaction of the organism in its cotentive, integral function on the one hand in contrast to the organism's attentive, selective function on the other.[20] The total mergent is represented in the direct interaction of organism and environment. In the organism's recourse to shelter against cold, to food in response to hunger, to mating in response to sex tension, we see the bionomic reaction that is expressed in total spontaneous mergents. Such spontaneous mergents invariably affect the organism as a total reaction. Whether in such reactions the whole organism is actually affected in all its parts is not to the point.[21] What is to the point is that the organism in its primary unitary function always participates as a whole in such mergents. The conditioned reflex, on the other hand, or the reaction of the organism under conditions in which a sign or associated element does service for the primary total stimulus, consists in a restricted, partitive or partial mergent. This occurs, as we saw, where a bell, a bark or a verbal symbol replaces the primary environ-

[19] See note 10, page 114.
[20] Cf. pages 115–116, 215.
[21] Cf. pages 116, 176–177.

mental stimulus. For this partial, generic response is restricted to a segment or to a circumscribed pattern of physiological response that has become wholly inaccessible to and independent of the organism's total mergents. The conditioned reflex, then, represents a partial reaction-mergent; the spontaneous, instinctive behavior of the organism represents a total reaction-mergent.

The nature of the false mergent should be clearly understood as involving always an artificially conditioned affect that replaces momentarily the sovereignty of the organism's total feeling-motivation. It involves the induction of a part-feeling or affect-response that invariably proceeds *from without in.* It is true, of course, that the organism as a whole may utilize the symbol with entire impunity when at the behest of the organism's empathic or feeling life the symbol is chosen to serve in its legitimate rôle of a quite mechanical index or reminder. For example, if, instead of actually participating in the pleasure of a country scene, I read a poet's description of such a scene, I am resorting to the use of signs or symbols that vicariously put me in touch with the rural setting depicted by the writer without encroaching upon the authority of the total organism. Or, more pertinent still, a scientific explorer may have become incapacitated through some accident and be unable to continue his scientific work through the pursuit of his actual explorations. In this circumstance he may resort to the writings of others in his field and still keep in touch to a certain extent with his life's interest. These are instances in which we have the quite consistent employment of the symbol in its purely representative, semiotic function, and its service to the organism represents a process whose direction is *from within out.* It is only as the organism's symbol-instrumentation is subjected to socially autogenous conditionings (affect-influences) which reverse and distort its purely denotive intent that the true mergent is overtly subordinated and a false, unproductive process assumes virtual supremacy over it. This reversed motivation in the organism's bionomic processes through the supremacy of false mergents has, according to phylobiological findings, now become the unwitting criterion of man's social behavior throughout the species.

If, then, as a race or genus we are to escape the universal

tyranny of false mergents, we need somehow to bring home to ourselves in a very real physiological sense the quite simple physiological fact that within the organism's primary feeling-sphere the symbol may function only as the index of an object or situation and not as the substitute for the object or situation. Because of man's inadvertence in adapting himself to the socially conditioned index or partial pattern of response, the symbol has become a substitute for man's feeling instead of remaining an inert index. That is, primary total feelings have inevitably been replaced overtly or socially by mere reflex, partial affects. This observation is true whether the substitution is the response of salivation in a dog at the stroke of a metronome, the raptures of a neurotic patient at the sound of his master's voice, or the reaction that causes loyal Jews the world over to bristle or cringe in response to the social index "Hitler." This partial mechanism, whether presented in the psychopathic individual opposite us or in the reactions occurring among ourselves as presumably normal personalities, is a response to an index-stimulus which, operating as it does among us inter-individually or socially, is now as automatic and as unconscious in the inciters as in the recipients of it. Only through the organism's total attention and awareness, only through the adoption of an altered frame of reference that is coterminous with man's total pattern of behavior, may we hope to observe and thus escape the overpowering association of affects in response to mere conditioning index-stimuli.

There are, of course, also prohibitive index-stimuli. Just as the organism is stimulated to respond positively, actively to a given index-stimulus, so a given index-stimulus may set up a resistive, opposed or negative attitude, or response. In Chapter Six we saw how Pavlov, by experimenting with a single stimulus in the single dog, could through a counter-incitement or opposed stimulus induce a neurosis in the individual animal.[22] So in the word-conditioned reactions of human beings in groups, of which we have just seen the paradigm in our hypothetical experiments upon the dogs, there has taken place automatically the induction of repressive (relatively negative) attitudes or counter-responses. These stimuli and counter-stimuli, their responses and counter-

[22] Cf. page 169.

responses *inter se* in the human species have in their pseudo or mimetic simulation come to approximate so closely the intra-organic processes of man's organism as to have set up within the organism attitudes that constitute an unwelcome affront to its sovereignty as a total behavior-reaction.

Among civilized human societies, whether in the sphere of man's ethical, economic or sexual behavior-reactions, the index or image, according to our findings, habitually involves affect as an overt replacement of primary feeling. It matters not in whom the symbol or index finds its exponent, whether its expression is individual or social, or whether it occurs as a stimulus or as a response. This index-reaction may be the expression of Confucius, Augustine, Hegel or Freud; of Marx, George or Veblen; it may be the product of an hysterical patient or of an experimentally conditioned dog. In each case an inert virtual sign or index has been transformed within the organism into an imaginal affect-substitute and the result is a partial, false or induced mergent. This means that the organism's spontaneous, outgoing feelings have been thrust back by enforced, incoming, partial excitations. It means that throughout the mentally conditioned processes of man there is the invariable replacement of primary total feelings with secondary reversed affects. This is why the resulting partial mergent represents a false mergent in contrast to the organism's total reaction-pattern or true mergent. These mergents, however, do not exist in isolation; they are systematized into habitual patterns of reaction that are dominant throughout the life span of the organism. In this way there is created an entire sphere or ambit of false or partial mergents on the one hand and a sphere of true or total mergents on the other. The sphere of the organism's partial, false, conditioned mergents we may call the partial or index ambit; the sphere of the organism's total or true mergents we may call the total, bionomic ambit. It should be understood that the use of the term "ambit" implies our inter-individual menstruum of communication. Where the contact is broad and encompassing, the ambit is total. Where our contacts are narrow and constantly conditioned through habit-adjacencies, the ambit is partial and restricted. This emphasis is required because it is difficult for man, hedged in at every moment as he now is by the

restricted, conditioned ambit, to sense the internal alteration consequent upon his adoption of a total relational ambit.

This restriction of the total mergent is as characteristic of man in his social conditioning to words or vocal gestures as it was of our hypothetical dogs reflexly conditioned to respond to the vocal gestures of other dogs. But in individuals who are generically, inter-individually conditioned, the recognition of their participation in falsely conditioned mergents is completely precluded within the limited scope of this falsely conditioning sphere. The reason is that in the type of interchange due to the quite fortuitous interpolation of a symbol or accidental mode of communication and contact (the sphere of man's partial mergents) there is operative the system of mergents or index-linkages which in the vernacular of the extra-organic or psychic constitutes the "unconscious." This sphere of man's unconscious, commonly thought to be profound, possesses, however, no more depth and dimension than the dimensionless partial mergents or index-linkages of which it is composed. In any event one would hardly expect of man, any more than of the dogs, that he would be capable of observing behavior-processes which are extra-organic or unconscious as long as he maintains a basis of "observation" that is itself extra-organic or unconscious.[28]

[28] At a round table discussion following a recent psychiatric meeting the view was expressed that psychiatry is at a standstill. This statement is most true if by it was meant that psychiatry rests on a basis that is purely extra-organic. In this sense man himself is at a standstill. This, however, was not the meaning—that psychiatry must repudiate its present extra-organic, partial (conditional) basis of procedure. Wholly unsuspecting the community's implication in a social neurosis in which the profession and the laity are equally involved, the attitude of my colleagues was, in effect, that this extra-organic basis might still remain as now the position of psychiatry, but that haply we would somehow set about establishing a newer, clearer method in the treatment of mental disorders while still retaining the basis of the old. On this reckoning it is unfortunately not true that psychiatry is at a standstill. If only it were! On the contrary, it is as forward bound as ever, and upon the same fictitious, extra-organic, "psychic" criterion of motivation. Undoubtedly psychiatrists, like every one else, recognize that something is the matter, but, as a group, psychiatrists have not as yet begun to suspect what the matter is.

Of course, as long as there is our present extra-organic social system and everybody is at liberty to regard himself as a psychiatrist—the man in the street, the dentist, the popular journalist, the vaudeville artist, teachers, parents, family doctors, Christian Scientists, clergymen, playwrights, the novelist, the trained nurse, the next door neighbor, or one's aunt—this unconscious, "psychic," extra-organic basis of attempting to deal with man's intrinsic disorders of behavior must continue to hold sway as the community standard of "treatment" for "mental and emotional disorders." An objective approach to biological maladjustments that

It is hardly necessary to recall that in other domains of medical and biological inquiry the processes investigated are studied as elements composing a phyletically continuous structure. In these domains our studies are directed toward discovering the characteristic structure and function of the element or process as it may be observed in its intra-organic relation to the phylum as a whole. Whatever function exists among the elements *inter se* is a function that exists as an intra-organic process that runs through and is continuous among all the cells or elements composing the structure in its phylogenetic relations. But in respect to man's symbolically conditioned behavior there is wholly lacking this inclusive purview. By virtue of partial mergents affecting man as a race all processes which occur within the generically conditioned organism that we ourselves now embody are, in their overt expression, psychically, inter-individually conditioned, and they can therefore operate only inter-individually or extra-organically. As students of behavior, ourselves already racially conditioned *inter se* or psychically, we automatically assume that the processes we confront in behavior-disorders likewise operate only psychically or *inter se*. From this psychically conditioned, extra-organic frame of reference it is inevitably the habit of the psychopathologist to study one individual in relation to another or to other individuals as though each were a special entity in relation to other special entities.

The result is that within the socially conditioned domain of our psychiatric inquiries we are constantly presented with the extra-organic phenomenon of one individual (the physician), who presumably is healthily adapted, attempting to adjust or help another individual (the patient) who is not healthily adapted. It is not recognized that, as a necessary part of a mal-conditioned adaptation that exists racially, psychiatry in its extra-organic, psychic trends is as dissociated as the patient. That is, behavior-disorders as reckoned by psychiatry are not regarded organismi-

affect the organism of man as a race cannot hope to take its place with such objective methods of study as have been brought to bear upon other fields of morphological inquiry as long as these disorders of function affecting the organism's total behavior are left to the mercies of an exteroceptive, psychic intervention with all the mentally conditioned vagaries of "opinions" and "ideas" that go along with these preceptive hobbies, whether professional or lay.

cally except from a purely symbolic, theoretical, dimensionless frame of reference. They are regarded only individually, symptomatically. These disorders are not actually conceived, not internally appreciated and interpreted as a condition intrinsic to the organism as a phyletic whole. In short, they are not studied intra-organically or from the basis of their organic depth and dimension. No one, of course, would think of approaching tuberculosis or poliomyelitis from the unbiological basis from which we now approach the problem of nervous disorders and insanity. Only a faith-healer would essay to cure tuberculosis by having a person presumably without tuberculosis attempt to talk the patient out of his tuberculosis. As a result of bacteriological study one sees the condition as intrinsic, structural, intra-organic. One sees that where there exists tubercular process there is the presence in the tissues of physiological and chemical alterations due to a definite bacterial invasion by pathological organisms which, operating as an inimical race or species upon the organism of man as a race or species, affect his processes intra-organically.[24]

The linkage of the affect with the symbol is, as I have said, a phenomenon upon which the entire system of psychoanalysis rests.[25] But this situation is not characteristic alone of psychotherapeutic systems with their application to the special or specimen case. The linkage between affect and symbol is a phenomenon that exists throughout the race as a whole and that activates the system of interchange constitutive of man's social behavior generally. Seen in this light this phenomenon is not something to conjure with. This affect-symbol linkage represents a principle of behavior that is now rooted in the behavior of man as a neuro-social mechanism. Conjuring with it can only lead, as it has, to metaphysical or "psychic" systems of interpretation respecting the organism's behavior. But if in a soberer mood the principle to which we trace the meaning of the neurosis is found to be identical with the principle to which we trace the meaning of man's normal behavior-reactions generally, we should be able to trace these two symbolic systems of reaction—the one presumably pathological, the other presumably "normal"—to a primary

[24] Cf. page 26.
[25] Cf. pages 144–146, 305–306.

element common to them both. As a matter of fact, our phylobiological studies show that these two symbolic systems, the pathological and the "normal"—though generally supposed to be entirely different from each other—are directly traceable to such a common element or first principle. For in the normal individual as in the neurotic patient, the situation represents that of a partial reaction-mergent or conditioned response that is identical with the partial reaction-mergent or conditioned response which Pavlov elicited experimentally in the dog through the juxtaposition of a physiologically inert sign or symbol (a bell or metronome) and a physiologically active stimulus (the presentation of food). This response, then, whether occurring in the neurotic, in the socially "normal" individual or in a dog, is a reaction involving the physiological amalgamation within the organism of the symbol and the affect.

What happens in the dog is that through the frequent combination of the physiologically mechanical sound impression and the physiologically vital food impression, these two disparate impressions become physiologically *like* one another because of the circumstance of their mere juxtaposition organically in space and time. Through their mere temporal alliance the two impressions acquire within the organism's partial ambit an actual resemblance to one another. For concurrence or simultaneity in the incidence of two such phenomena constitutes of itself a resemblance or likeness between them. This likeness now organically established between the inert or mechanical stimulus and the vital or physiological stimulus is the biological significance of what, in our mental or symptomatic parlance, we term the symbol. Thus the sensation of likeness (partial or partitive mergent) with which we have replaced the sensation of actualness (total or integral mergent) is the underlying principle of the entire system of man's elaborate mentation with all its entail of partitive (affective) confusion as expressed in the outer, symbolic symptomatology of both the "neurotic" and the "normal."

The quite epiphenomenal, extra-organic nature of this *like*, this index-conditioned or psychic reaction should be kept clearly in mind. It should be realized that the mere juxtaposition or coincidence subjectively of two objective phenomena as registered

within the cortex is a purely dimensionless reaction in so far as no objective dimension corresponds to this phenomenon of "likeness." A box consisting of an accurately measured cube possesses, of course, its definite dimensions; a second box that is of identical material and size will also have its definite dimensions. But the quality appreciated subjectively as resemblance between the two boxes is not a condition inherent in the dimensions or the material of either box. The resemblance or likeness between them is a purely psychic, subjective phenomenon and is the result of a reaction within the organism that is due to the similar physiological impressions produced by the two boxes upon the sense-organs by which they are apprehended.[26]

In the hypothetical experiment on the dogs we cited a moment ago we saw the operation of this physiological principle of likeness as it was artificially made to function among the animals inter-individually. We saw in this system of social interreactions artificially induced among the dogs the direct parallel to the system of interreactions which has been induced in man in the process of his evolution as a race. For in this inter-cortical mechanism we saw the substitution of inert social likeness for physiological actuality as embodied in the partial mergents that characterize the social contacts of organisms *inter se*. The organism's total mergents, or the reactions of man's organism as a whole to the environment as a whole, are actual, intra-organic reactions. Man's partial reaction-mergents which exist within the species *inter se* or inter-cortically are represented in mere sensations of *likeness* to actuality in contrast to the *actual* physiological reactions for which these sensations of likeness stand. Where this sensation-likeness produced in the single individual has its counterpart in other individuals, there arises what, in the vernacular of outer symptomatology and the symbol, is called "mental or social interchange"—the epiphenomenon known socially in its primarily irreducible element as the idea or image and its concurrent affect.

In the world of man's experience we have among other reactions a sensation called agreement or affinity as contrasted with the sensation of disagreement or antagonism. But apparently it is

[26] Cf. page 226.

entirely a matter of symbolic likeness due to the fact that words or verbal stimuli originally intended as mere indicators of actuality have come to stand as substitutes for actuality itself. That is, partial, symbolic mergents reacting within the species *inter se* have come to stand for total, organic mergents reacting *intra se*. According, therefore, to the organismic requirements of our altered frame of reference, the seemingly important matter of social agreements between any two people is really nothing other than the accidental interposition between them of a common (community) index, or of an inert conditioning stimulus that causes the *same* or a *similar* index- or likeness-reaction in each of them. On the contrary, our disagreements are represented in the accidental interposition inter-individually of a common (community) index, or of an inert conditioning stimulus that causes a *different* or *dissimilar* index- or likeness-reaction in each of us.

Where there exist among people false mergents or index-linkages of the same type, there occurs the epiphenomenal reaction known in psychoanalytic parlance as a positive transference. Where the linkages are dissimilar, there occur the epiphenomena known as negative transferences.[27] In the first instance of this social linkage or amalgamation the subjects or participants are conditioned to love, respect, approve of one another, and conversely where the linkages are dissimilar, they are conditioned to an exactly opposite response toward each other. This means that man's interchange socially rests upon accidental bio-physical incidents of parity or disparity due to the nature of the purely inert index-conditionings existing among individuals. As an example, the stimulus produced by the word "Democrat" instantly conditions certain elements in the community to the *same* (*similar*) index- or likeness-reflex and promptly rallies them around the party platform, but these same elements would be quite as automatically dispersed by the stimulus word "Republican" because of the *different* (*dissimilar*) index- or likeness-response among them.

As an acute expression of the imbalance functionally of our organismic processes we need only consider the universal trend

[27] Cf. pages 144–145, 269.

toward war among those segregated groups we call nations. War is not in the heart of man but in his head. It is not a conflict that is instigated within the total internal processes of man's organism, but arises only within his index-conditioned cortex with its upstart effort to invade those total processes which are the very matrix of the organism's motivation. Throughout the social symptomatology of man's organism as a phylum there exists no more formidable example of this divisive trend than war. For conflict between nations is but the socially systematized expression of the same conditioned, extra-organic trend which in its picayune, individual expression we know as irritability, antagonism, "dislike" on the one hand, and as sentimental affectivity, narcistic dependence or "liking" on the other—index-reactions that underlie those major social processes expressed in neurosis and crime.

In accordance with the investigations of phylopathology it is extremely important for students of human reactions to recognize that the phenomenon of man's social behavior, universally governed as it is by his conditioned "likes and dislikes," is a phenomenon which, though phyletic in its range, possesses in point of fact no conscious directive influence whatsoever over man's intrinsic behavior-processes. These "likes and dislikes" are the mere symptomatic, partitive reflections of similar and dissimilar index-responses—responses to which people are unwittingly, affectively subjected and over which they habitually delude themselves into believing they have conscious control when, in truth, these reflexly conditioned responses occurring inter-individually among us have everywhere reflex ("unconscious") control over man. However distasteful to contemplate, the fact is that, due to his inadvertent affect-linkages, the "symbols" which social man "thinks" he employs quite voluntarily are, like the social reactions induced artificially in the hypothetical experiment upon the dogs, really employing man as a quite involuntary instrument subject at all times to their arbitrary commands.[28] In this outlook I think it may be safely predicted that primary, internal, proprioceptive man will prove to be a very different animal from the animal which, in his symbolic, projective, reflex conditioning, he now "thinks" he is.

[28] Cf. pages 183–184.

Over against all this social welter of autogenously conditioned reactions represented in a dichotomy of false mergents—like and unlike, for and against, good and bad, you versus me—there is a more basic, more primary motivation of the organism's bionomic processes. Over against these partial mergents of man which appear to motivate his behavior by reverting upon him socially in the form of inter-individual affects there are the organism's true or total mergents depending for their motivation upon a basic principle of internal coördination. This adjustment also involves, as I said earlier, to-and-fro alterations, but these oscillating alterations occur in response to the organism's basic bionomic needs.[29] In contrast to partial, affinitive conditionings (positive transference) there are the total organism's identical or assimilative responses in relation to the environment, while in contrast to partial conditionings that are disaffective (negative transference) there are the total organism's un-identical or un-assimilative reactions to the environment. *Thus the outer contrarieties of liking and disliking (parity and disparity) occurring in the sphere of the organism's partial mergents are in reality the distorted reflection of reactions which in the sphere of the organism's total mergents are to be seen as the primary alternations of identical and incongruous physiological processes.*

In the instance of the total physiological mergents the organism adjusts its variations in relation to a primary principle of *fitness* or organic coördination.[30] Whatever conserves the organism's well-being is fitting or appropriate to its needs. But the "good" (or "bad") which I project rests upon an altogether arbitrary likeness- (or unlikeness-) conditioning which only serves to mask the organism's basic alternations—those alternations which relate the organism physiologically to a central constant and thus preserve its primary coördination and health as a totality. The significance of the "like" thing toward which I turn, as also the significance of the "unlike" thing from which I turn away, rests upon accidental reflexes which are merely psychic, extra-organic or index-conditioned. Thus "goodness" (or "badness") is a matter of mere temporal juxtaposition or of purely accidental

[29] Cf. pages 46–47, 296.
[30] Cf. page 53.

adjacencies. These index- or likeness-conditionings of the organism in response to what seems to the projective senses good or advantageous on the one hand and bad or disadvantageous on the other comprise the sphere of reactions I have called *homogenic* (the organism's index-conditioned affects or partial mergents); while the reactions which are regulated in terms of the fitness and internal congruity of the organism as a whole in its coördination with the environment as a whole, constitute the sphere of reactions I have called *orthogenic* (the organism's primary feeling-response or total mergent).[31]

There is primarily, then, a physiological equilibrium that is dependent upon the proper maintenance of balance of the organism as a whole. The organism receives and assimilates stimuli which are suitable or adequate to its needs, while whatever stimuli are of an incongruous, non-utilizable nature, are not assimilated by the organism in its function as a whole. If, for example, the organism experiences hunger and replenishes its needs with food appropriate to it we have an instance of what I have called the organism's identical reaction. If the body becomes too cold and is unable to restore its warmth, the organism experiences the sensation of an incongruous condition or of a condition that is not commensurate with its harmonious equilibrium. Each of these instances represents an orthogenic response as in each it is a question of the organism's equilibration as a total mergent. Thus in its orthogenic function the organism distinguishes between reactions which are identical and those which are disparate in relation to itself. This orthogenic coördination of the organism in response to identical and incongruous stimuli is the basis of its integration and health as a total reaction. It is this total motivation regulated intra-organically by the organism's total mergents that has been overtly replaced and distorted throughout the phylum by homogenic conditionings. These conditionings, now operating socially or *inter se,* artificially introduce partitive, affective or symptomatic behavior in the individual as a separate, psychic, extra-organic social element.

In the case of the dogs, which according to our hypothetical experiment unconsciously condition one another, it is not difficult to recognize that if the animals were to become conscious

of the basis of their sensations of "like" and "dislike" in respect to each other they would see that they are reflexly conditioned similarly and dissimilarly toward one another and, having discovered that the laugh is on them, they would automatically orient themselves in regard to their inept behavior and promptly put a stop to it. For the conflict introduced among the dogs is one that affects the animals as a community process. So that if the animals should be impelled by the discomfort of their neurosis to reorient themselves with respect to their inter-physiological continuity as a species, it would be necessary for them to reintegrate their behavior as a total, organismic process.

So with man. But unfortunately, like the dogs, man as a social animal, with his homogenic competitions, socially, familially, industrially, with his like-conditioned creeds and his unlike-conditioned wars, his nationalisms and his internationalisms, does not see nor wish to see—at least not yet—that the laugh is on him. For, as with the conditioned animal, a group or community of men whose communication rests upon a conditioned, *inter-se* basis is not in a position to put a stop to physiological reflexes which operate among them *inter se*. Such a group is not in a position to reorient itself physiologically in respect to these reflexes through a mere symbolic, *inter-se* attitude toward them. In other words, man cannot correct disorders arising from the misuse of symbols by the mere employment of additional symbols. It is precisely this symbol-substitution which has replaced the organism's total motivation. While it is possible for him to shift from one symbolic system of orientation to another, neither the community nor the individual becomes, through such a shifting, organically conscious of reflexes which are extra-organic. The community does not reorient itself in respect to these extra-organic processes in the sense of superseding their index-conditioned unawareness with physiological awareness. Through recourse to the symbolic or extra-organic the individual may, and in fact always does, remain "right" no matter on what side he stands, what religion he embraces or what wars he fights. But though he shift his weight from one foot to the other, his intrinsic, internal posture remains unaltered still. For the conflict in man is not primarily symbolic, index-conditioned or *inter-se*—it does not exist primarily in the relation of one discrete individual to

another, but involves a common nexus or continuum of individuals commonly conditioned as a species *intra se*. In short, the conflict is intra-organic, organismic. It is continuous throughout the organism of man as a phylum.

The health or wholeness of man's reactions socially, then, is dependent upon the unity of these reactions intra-organically. Health is the relation of the total (phyletic) organism to the total environment, not the "good" behavior or the "correct" response of this individual to that in accordance with the accidental index-conditionings or homogenic stimuli in respect to which each is a completely unsuspecting automaton. In this physiological interpretation of the phyletic status of man socially, the mere symbol of unity and coördination is seen to be the myth that it is when it attempts to direct and control the behavior-reactions of man inter-individually.[32] In its substitutive, *inter-se* functioning, this image or symbol of physiological unity is seen to be as artificial and as disruptive in its affective reversion upon man as is the affective image that has reverted upon him in the conventional, homogenic form of "God," "money," "love," "home," "country" or other symbolic indices originally projected by him and toward which he now entertains ideas based upon a purely dimensionless code of images—a code of images which belongs entirely to man's *inter-se* system of partial reaction-mergents.

In Chapter Eleven I described the technique whereby the individual may sense in himself the underlying physiological counterpart of the system of reactions now presided over and regulated by the symbol. I said that through man's awareness of those physiological tensions which belong to this domain of homogenic or likeness-conditioned reactions, the individual may restore his organism's total reaction-system to its biologically sovereign position and correspondingly give a subordinate place to the tensions governing the external code of signs and symbols that has become of such handy use in stenographing the objective intricacies of man's social interchange. This procedure, however, related to a specific experiment undertaken with a view to establishing the difference between the two types of reaction as perceptible in the individual.

[32] Cf. pages 183–184.

But we have now to consider these types of reaction in their larger racial significance. For, through the image or index with which the world of objects and events is now reflected among us *inter se,* man's feelings generally, as I have indicated throughout this book, have taken on the color of an appearance or likeness in place of the intrinsic physiological expression of organic feelings themselves. In other words, the domain of the organism's homogenic conditionings with its external symptomatic relationships has now overspread the organism's primacy as a whole, and to-day *inter-se* relationships everywhere supersede overtly the functional continuity of man's intra-organic life. But the *like part* that makes contact with the environmental item, replacing the organism's contact with the *actuality of the object as a whole,* is lacking in depth and dimension.[83] A purely symptomatic rapport is substituted for organic continuity. The partial ambit has, in effect, replaced the organism's total ambit. Mere homogenic, psychic or cortically conditioned reactions have assumed overtly the rôle of the organism's total orthogenic functions. Just as in the ontogenetic sphere, the element of likeness, of the image or the projective relationship has come to do service *inter se* in place of the intrinsic continuum or identity primarily uniting the infant and the maternal organisms,[84] so, in the sphere of man's phylogenetic behavior, reactions that are conditioned by likeness to actuality—by the substitution of the projicient sign or symbol—have replaced the organic primacy of man's spontaneous identity or continuity as a race.

If man is to acquire an objective appreciation of this inadvertent, homogenic conditioning that now characterizes his reactions *inter se* and return to a basis of behavior that is intra-organic, he can do so only from an altered frame of reference that is biological and intrinsic to the processes of the race in their innermost actuality. From this altered frame of reference we shall be able to obtain a stabilized criterion in respect to those likeness-conditioned reactions which are now necessarily reckoned upon a purely arbitrary, transient, conventional premise and which lack the orthogenic solidarity of organic depth and dimen-

[83] Cf. pages 223, 243.
[84] Cf. pages 88–90.

sion. Through this criterion it will be possible for us to derive a common principle for evaluating man's many inadvertences in behavior-adaptation.

In the absence of a clear differentiation between the organism's homogenic and its orthogenic spheres of reaction it is inevitable that psychopathologists should apply the restricted test of the mere homogenic or conditioned reaction *inter se* in their evaluation of these anomalies; it is inevitable that because of this inadequate frame of reference our judgment in respect to the primary element determining man's behavior-disorders should be distorted. It is to this internal limitation in our frame of reference that is due, for example, the narrow conception of psychopathology when in referring to "homosexuality" (likeness- or index-sexuality) it restricts its interpretation of this form of image-inadvertence and consequent feeling-deflection only to the homogenic (likeness or "homosexual") relationship that exists between persons of the same sex-determination. From the more inclusive phylobiological frame of reference the investigator of man's behavior-processes cannot escape the conclusion that *likeness* or homogenity as a criterion of feeling-response is no less characteristic of the relationship existing between persons of opposite sex than of persons of the same sex, or that this basis of homogenity as a criterion of sex or love is any less characteristic of so-called normal relationships than of obviously pathological affiliations. For man's feeling-relationships, sexual or otherwise, are throughout begotten of an image- or likeness-conditioning that inevitably reverts to a basis of behavior that rests upon the organism's partial mergents.

As I said in *The Social Basis of Consciousness* (though I confess that in my purely symptomatic, partitive approach at that time the statement rested upon intuitive inference rather than upon actual experimental evidence), the bi-dimensional social image entails an artificial reversion upon the organism through which the organism is made to reflect rather than absorb the environment about it.[85] Responses which are conditioned by a

[85] Burrow, Trigant, *The Social Basis of Consciousness—A Study in Organic Psychology*, International Library of Psychology, Philosophy and Scientific Method, London, Kegan Paul, Trench, Trubner & Co.; New York, Harcourt, Brace & Co., 1927, p. 58.

homogenic association between the accidental stimulus and the physiological stimulus intrinsic to the reaction elicited are always mere *inter-se* responses which, lacking depth and dimensional solidarity, possess no true authority over the physiological reaction of the organism as a whole. When man will have adopted an altered frame of reference for determining the operation of his own bionomic processes and will have rendered objectively clear the artificial nature of the conditioned word-responses to which he is now everywhere subject as a race, he will recognize that these inter-individual or *inter-se* responses are not an expression of the organism as a whole. For the organism as a whole always presupposes a phylogenetic as well as an ontogenetic basis of integration and behavior.

This distinction between the conditioned, the partial or homogenic reaction and the organism's integral response to the object's total actuality is of the utmost importance to sociology in adjusting its measures and values respecting the coöperative function of social units. Again the distinction is one between the collective whole and the organic whole.[36] *Likeness,* or the conditioned *inter-se* image as a basis of human interchange, rests upon the quite artificially assumed premise of a collective whole as the determinant of man's behavior, whereas the only whole that is intrinsic to the organism is the organic whole. We have only to consider the organism's extraordinary capacity in compensative functioning under circumstances in which considerable areas of the brain have been wholly destroyed,[37] to recognize the limitless resourcefulness physiologically of processes which function under the sovereignty of the organism as an organic whole in contrast to the mere reflex part-functions that tend secondarily to create a collective whole and thus to supplant the organism's primary unity of function. The germ cell from which the later adult organism develops represents organically in its minute protoplasmic elements the organism's whole organic potentiality, both ontogenetically and phylogenetically. In the collective whole,

[36] Cf. page 116.

[37] Goldstein, Kurt, "Zur Frage der Restitution nach umschriebenem Hirndefekt," *Schweizer Archiv für Neurologie und Psychiatrie,* 1923, Vol. XIII, pp. 283–296.

Lashley, Karl S., *Brain Mechanisms and Intelligence; A Quantitative Study of Injuries to the Brain,* The University of Chicago Press, 1929.

however, each element composing it is strictly a *part of* the entire sum represented collectively by all the parts. But the organic whole presupposes the totality of the part. So that in the organic whole, as understood throughout this work, the part is potentially the whole at the same time that it is the part.

In the absence, therefore, of a premise that recognizes the organism's primacy as an organic whole we lack a basis for evaluating the partitive conflicts occurring in the individual organism. Likewise the conflicts and disruptions that occupy the thought and study of the sociologist will not be reached in their intrinsic significance as long as the sociologist continues to evaluate his measures upon a basis of "normal" part-function or likeness. For he is unable to recognize in these falsely conditioned reactions the subjective factor that is the underlying principle of motivation in the conflict and disruption that are the presumable "objects" of his study. Even the simplest incident of discord, the passing disagreement between parent and child, is utterly lacking in an intelligent basis of adjustment in the absence of a scientific criterion of actuality and objectivity such as runs through and unites in an intra-organic continuum the supposedly discrete, *inter-se* or homogenic (likeness-conditioned) reactions now governing the behavior of the individual and the race.

As I have said, where our socially conditioned likeness-reflexes are similar there exist amalgamation and accord among individuals, and they experience the sensation we speak of symbolically, symptomatically, as liking or the "transference." Where our socially conditioned likeness-reflexes are dissimilar there is the reaction of rejection and defense, and there occurs the internal sensation we know symbolically, symptomatically, as disliking or "antagonism" ("resistance"). Once more we have but the alternating contrast of good and bad, pro and con, gain or loss, you and me. And so the individual, who in his preceptive habits of inference thinks himself a free and original agent in respect to his conduct, is in his very thinking giving expression to a process that is dependent upon the socially conditioned likeness-reflexes that everywhere activate human society.

But our thesis requires a more encompassing outlook. Just as there are index-reflexes or partial mergents which may unite or

separate single individuals, so there are *systems* of index-reflexes or partial mergents which may unite or separate clusters of individuals. We have, for example, such clusters as the British Empire, the Catholic Church, or students of behavior-disorders, but each cluster, the one political, the other religious, the third psychotherapeutic, represents a system of socially conditioned reflexes or partial mergents. Within the nationally conditioned system of index-reflexes or partial mergents there may be such sub-classes as capitalists, communists or socialists; within the ecclesiastical group we find such socially conditioned divisions as religious orders, the secular and lay communities; among psychotherapists we find groups of such widely differing conditionings as the Freudians, the behaviorists or the descriptive psychiatrists. Yet in these various parties, denominations or schools it is assumed that the individuals composing such clusters have formed their affiliations in accord with what is their choice or liking. But, on the basis of the organism's partial reactions, what the individual "likes" is really his response to a homogenic or index stimulus that is socially conditioned and that socially conditions him. In his likes as in his dislikes the individual is really subject, not agent. He is conscript, not free. His reaction is homogenic, not orthogenic. Whatever his affiliation may be, it is sectarian, and *sect*arian is, as the word implies, sectional, divisive or partial.[38] Like the dogs in the experiment proposed in which the mere temporal coincidence between an inert and a vital stimulus determines the likeness (or "likeableness") of the animals' response, so in the various human reactions of individuals upon our present psycho-social level, these reactions represent at all times mere socially conditioned index-reflexes or partial mergents.

We have already noted the importance for sociology of the distinction between the organism's homogenic and its orthogenic reactions. This distinction is of equal importance in the domain of criminology and the law. In the manifold divisions as also in the manifold affiliations existing throughout communities of men the conditioned reflex or the partial mergent that is socially decisive is the paramount dichotomy we recognized earlier as right

[38] "Partial," incidentally, has also the implication of divisive and sectarian. Consider also the word *partisan.*

and wrong, in which each "right" individual (it matters not how "wrong") is always the sole and arbitrary judge of his own conduct as well as that of others on the basis of his own proprietary "rightness." But standards which depend upon these arbitrary conditionings of "right and wrong" are purely psychic or extra-organic. Such partial criteria cannot be decisive in coördinating the organism's behavior as a whole. Is it any wonder, then, that we get nowhere in our criminal courts as in our international disputes in the absence of a more stabilized criterion for determining the dependable basis of motivation in man's behavior-processes? [89] Is it any wonder that in all departments of psychiatric and welfare work students of behavior still maintain a frame of reference that permits them to talk of the symptomatic indices or appearances that *symbolize* disorder and do nothing about the internal maladjustments that *are* the disorder? Certainly this extra-organic procedure is not consistent with the intra-organic criteria elsewhere demanded by science. In every other sphere of science its criteria rest upon the determination of a primary element or first principle as the indispensable basis of dependable scientific investigation. In the domain of man's behavior-processes on the contrary, secondarily conditioned reflexes have in their overt expression arbitrarily taken the place of the organism's primary principle of motivation and have thus precluded a dependable basis of scientific observation and adjudication.

With the adoption, however, of an altered frame of reference toward the problem of man's behavior-disorders, it becomes possible to discriminate between primary total mergents and secondary partial mergents, between mergents which are a free expression of the organism as a whole and mergents which represent a restricted reaction of the organism in its partial physiological patterns. Man may learn to acquaint himself objectively, practically, with the symbol, the index, or with the dimensionless mergent on the one hand and with the primary or dimensional mergent on the other. He may learn to demarcate automatically the sphere of the organism's partitive reactions with their dimensionless response to the vicarious symbol of an object, and to contrast this sphere with the sphere of the organism's total dimen-

[89] Cf. Chapter III, pages 52–55.

sional reactions in respect to the actuality of the total object itself. To this end man needs on the one side to acquaint himself with mergents in which his reaction represents a socially conditioned reflex, and in subordination to which he is now constantly responding automatically, and on the other with mergents which are a spontaneous expression of the total organism's reciprocal reaction toward the actual dimensional environment as a whole.[40]

The frame of reference that is partial or conditioned is, as has been said, limited to a purely inter-individual premise of behavior. Restricted to the index and the outer appearance, it lacks organic depth and dimension. Subject to a purely inter-individual symbol or index such a superficial frame of reference is not intra-organic. In its relation to the organism's total basis of motivation it is purely extra-organic. It envisages mere signs, indices or social images. So that from this restricted frame of observation and assessment, the phenomena seen in the various surface indications of behavior collected under the infinite categories of conduct described as compulsive, phobic, depressive, psychasthenic, manic and hysterical states, with the thousands of items laboriously summarized under each, possess no truer objectivity, no more depth and dimension than the ancient phenomenon described in the Biblical account of the woman who lay sick of a fever. In contrast to this superficial, extra-organic premise there is indicated the possibility of adopting a frame of reference toward man's behavior-disorders which, being generic and intra-organic, possesses dimensional depth and solidarity.

In place, then, of symptoms, outer appearances and the indices habitual to our present extra-organic mode of inference (a mode embracing the "residues" and "derivatives" of Pareto)[41] it is necessary to turn to the direct observation of intra-organic states themselves with their corresponding tensional configurations. Setting aside such external pictures, such purely vocal indices as

[40] Interesting discussions from the view-point of the sociologist of the influences of tensions in determining human behavior are to be found in papers by Lawrence K. Frank. See especially his "Physiological Tensions and Social Structure," *Publications of the American Sociological Society,* 1928, Vol. XXII, pp. 74–82; "The Management of Tensions," *The American Journal of Sociology,* 1928, Vol. XXXIII, pp. 705–736; "Structure, Function and Growth," *Philosophy of Science,* 1935, Vol. 2, pp. 210–235.

[41] See note 13 page 204.

depression, narcism, suspicion, compulsion, elation, guilt, sexual inversion, aggression or passivity, psychoneurotic intractableness or amenability, the transference or counter-transference, etc.—setting aside all these extra-organic, psychic manifestations, whether occurring in ourselves or in others, we need to turn to the physiological actuality of tensions which are immediate and internal to the organism. In this way we shall recognize that the one type of tension relates to a wholly dimensionless, epiphenomenal meaning, the other to a dimensional, phenomenal actuality; that the one is partial, the other total; the one conditioned, the other spontaneous; that the one represents a mere cortical index, while the other embodies the organism's actuality as a total response. It should again be emphasized that these differences in internal pattern or configuration are not to be discriminated one from another within the frame that is restricted to the item or index as cortically projected. Talking and thinking will not avail. As man's total configuration preserves its place in man's behavior as a consistent sphere or ambit, our only recourse lies in re-identifying ourselves with this configuration or ambit as a sovereign, internal principle of motivation within the phylum.

And so when it comes to the recognition of the practical physiological determinants in man's deviations of behavior, when it comes to a student's or a patient's practical observation of the internal tensions and strains that demarcate his total behavior-patterns from his partial patterns of behavior, there is no prescription that may be put in symbolic terms. It is precisely at this point that the symbolic index ceases to function. As in other fields of science one ceases to talk about what should be done and proceeds to do it.[42] In our approach to this task we have

[42] My colleagues are, in all sincerity, forever besetting me with the demand that I give them *in symbolic terms* the equivalent of a technique that is not symbolic but that is stereognostic and internal to the organism as a whole. From their extra-organic, symbolic, psychic frame of reference it is inevitable that my psychiatric colleagues should cling to the view that life is restricted to the extra-organic, the symbolic and the psychic, that they should feel that there is no point at which talk ceases and the organism rests upon its own, but that the verbal image is the be-all and the end-all of human behavior. These same students would, of course, not think for a moment of holding such a subjective, *a priori* view toward any other sphere of objective inquiry. In any other field of investigation they would recognize that in a laboratory one approaches a process of actual experimentation in an attitude for which no verbalization, no talk, no psychic ratiocination may do substitute service. But the position of my colleagues is

found that the chief clue for discriminating between postural tensions pertaining to one's partial or conditioned pattern of adaptation and the tensions belonging to the organism's total pattern of response appears to lie in the region of the eyes and their adjacent structures. As previously stated, the eye occupies a pivotal point between the two types of mergent—the conditioned or affective and the total or spontaneous.[43] Where the organism's tensions and alterations are in line with the total intra-organic sphere, the eyes tend to become relaxed and to maintain a more or less steadfast position. Certainly observations upon myself have shown that under conditions of the organism's integration and total orientation the eyes are maintained in a state of greater or less quiescence, while correspondingly the affect-components occurring in thinking are automatically interdicted. Contrariwise, the dominance of partial patterns entails greater or less eye-movements which, being quite outside the patient's central control, tend to disparage the organism's coördination in relation to its central principle of motivation and to the object as a whole.[44]

definitely coterminous with their own affect-conditioning precisely as was the case with my associates and myself prior to our research in the organism's generic behavior and its disorders. We too, of course, set out upon our group investigations from the same verbal, psychic, extra-organic premise, and from the basis of this false premise we were in the beginning completely impervious to any other position. Nothing availed to offset this tendency to personal and social bias except the daily routine of actual experimentation with processes which are intra-organic and which, possessing depth and dimension in relation to the organism as a whole, called definitely for an altered frame of reference in respect to man's behavior-processes as internally perceived by us.

[43] In this connection the experiments of Hess and his co-workers on the relation between certain reactions in the eyes and the organism's vegetative tonus are of special interest.

Hess, W. R. and Lehmann, F. E., "Der Einfluss vegetativer Reizstoffe auf den Adaptierungszustand der Retina," *Pflüger's Archiv für die gesamte Physiologie,* 1926, Vol. 211, pp. 603–611.

Hafter, Ernst, "Untersuchungen über den Mechanismus der retinalen Umstimmung hinsichtlich einer Abhängigkeit vom vegetativen Nervensystem," *Pflüger's Archiv für die gesamte Physiologie,* 1932, Vol. 229, pp. 447–465.

Bovet, Lucien, *Untersuchungen über die Beziehungen zwischen Auge und Gesamtverhalten beim Frosch,* Zürich, Buchdruckerei Fluntern, 1935.

See also notes 31 and 32, page 286.

Consider, too, the Berger rhythm phenomenon and its significance in relation to the function of vision. Adrian, E. D. and Matthews, B. H. C., "The Berger Rhythm: Potential Changes from the Occipital Lobes in Man," *Brain,* 1934, Vol. 57, pp. 355–385.

[44] Cf. page 287.

To suppose, however, that a mere discrimination in ocular tensions is the solution of man's disorders of adaptation, individual and social, is to presume a facility in total kinesthetic adjustment that is quite phantastic. It is to essay a programme of bio-physical reconstruction that counts without its bio-physical host, for we are dealing with nothing less than the internal organism of man as a whole. What is required is a consistent internal appreciation of the system of tensions that constitute the basic and prior motivation of the organism as they contrast with tensional patterns that are concomitant to one's habitually partial, externally conditioned reflexes. This restitution of patterns existing within us *en masse* implies an unequivocal assault upon one's most cherished, one's most deeply conditioned affects. It is to arrest reflexes which have dominated the behavior of the organism from earliest childhood and which have come to enjoy the automatic support of the entire social community. It is possible, however, as I have indicated throughout these pages, for students of behavior to undertake such an intra-organic investigation based upon the evidence of immediate sensation. And I venture to state tentatively that, where such an experimental procedure is generally adopted, the observation of the minute sensations and reactions recorded in the special tensions located in the eye-muscles will prove a critical and indispensable step in the ultimate discrimination of the organism's larger tensional configurations.[45]

Thus, within the species man there has gradually arisen a social or generic situation which is similar to the situation artificially produced in the dogs and which exists by virtue of the conditioning of responses produced inter-individually among us. By means of the code of interrelations slowly established in the gestures of communication first employed by man in the use of the hands and general body movements—a use probably only

[45] It is interesting in this regard that in his experiments in muscular relaxation Jacobson has found that minute eye-movements are an integral and essential part of the larger patterns represented in thinking and imagination, and that where relaxation of the eye-muscles is complete and such movements are excluded it is impossible for the subject to entertain images or ideas.

Jacobson, Edmund, "Electrical Measurements of Neuro-muscular States during Mental Activities. III. Visual Imagination and Recollection," *American Journal of Physiology,* 1930, Vol. XCV, pp. 694–702.

later transferred to the mouth and larynx [46]—we have as a race become unconsciously conditioned inter-individually to outer signs, symbols or words. In the case of the dogs artificially stimulated to some audible expression and thereby stimulating a conditioned response in other dogs, the phenomenon established among them *inter se* is, of course, entirely unrecognized either by the dogs producing the stimulus or by the dogs in which the conditioned response is produced. Similarly, as individual components of the species man likewise conditioned to participate in such a reflex nexus of reactions, we do not recognize or express consciously the symbols or verbal conditionings spontaneously established among us homogenically. Indeed, if we will adopt a frame of reference that regards man's social reactions as an inter-individually or inter-cortically conditioned process, we shall see that within a very wide sphere of his behavior man produces unconsciously not only the words or responses with which he reacts *inter se* but he produces equally unconsciously the word-stimuli that incite his reactions. As I have said, such an unrecognized homogenic nexus existing among us inter-individually or inter-cortically is really the texture, both socially and individually, of man's disorders of behavior. But as yet the psychopathologist has singled out only a special phase of this condition. He has singled out only the special phase that involves conflict in the individual, and this he has called the "unconscious."

But whether in dog or man, the essence of the process presented consists in the physiological concurrence within the organism of reactions occurring in response to disparate stimuli that have arisen simultaneously in the world of objective phenomena. In the simple, discrete laboratory experiment we have the union of an auditory stimulus—a bell or a metronome—and the presentation of food to the animal. The bell and the food are, of course, organically as well as objectively, totally unrelated. The mingling or coalescence of food and sound, objectively, is quite unthinkable. But produced simultaneously they cause within the receptively sentient organism a unitary reaction. When the concurrence of the two stimuli has been sufficiently established, the second or incidental stimulus is rendered competent to produce

[46] See note 5, page 251.

a substitutive or conditioned response within the organism in contrast to the original response of the organism as a whole to the biologically adequate stimulus. This is the induced or conditioned type of reaction, and it is with this conditioned type of reaction in man—it is with man as an organism thus racially conditioned throughout—that we are here attempting to deal.

May I once more recall that even within the sphere of the organism's conditioned processes—the sphere of man's partial mergents—science has from time to time progressed toward wider outlooks, concepts and opportunities. But it has done so only through the adoption of an altered frame of reference that is not applicable outside the limits of this socially conditioned or symbolic sphere. Through an altered frame of reference with its attendant depth and dimension, progress has been made in physics, mathematics, astronomy and allied sciences. In the field of medicine, progress and an altered frame of reference have been made possible by means of the depth and dimension achieved through the sciences of cytology, physiological chemistry, bacteriology and other objective disciplines. But in man's preoccupation with the extra-organic and the psychic in substitution for the intra-organic tensions and alterations determining the function of his own organism as a totality, the attitude of medicine toward disorders of behavior or toward the organism's maladaptation as a whole is to-day precisely that which it held in respect to the diseased part or organ before the invention of chemical analysis, bacteriological technique and the microscope. In the absence of these aids to observational depth and dimension medicine saw in these organs only the outer sign or index of disease. Similarly, in the absence of a technique that affords observational depth and dimension in relation to man's organism as a generic whole, man sees but outer signs and symptoms; he sees but the psychic, the extra-organic manifestations of the real disorder. It is obvious that the bionomic frame of reference of an organism that is symbolically conditioned throughout the species is fundamentally different from the bionomic frame of reference that prompts and controls the organism that is not thus symbolically conditioned. So that just as in the objective medical sciences we have been brought to look differently at and to reckon differently with the

tissue or process observed because of the different basis from which we look at and observe it, to-day it would appear to be the urgent need of medicine to acquire an altered frame of reference in order to achieve greater depth and dimension from which to look at and observe those processes which constitute man's disorders of behavior as a race.

The investigation that has been in progress over many years with myself and my associates of The Lifwynn Foundation represents, then, a programme of experimentation that has been directed increasingly toward the organism's internal tensions and modifications as these internal alterations have been found to bear upon man's behavior and its disorders. It has not been our effort merely to offset symbols with symbols, to replace old conditionings with new, or to introduce fresh ideas in place of the ideas habitually entertained by us. Our work represents precisely an effort to *un*condition our reflex, partial, index responses where these responses tend to interfere with the organism's primary basis of motivation. It has not been our purpose to interpose a new conditioning as in the case of the hypothetical dogs or as is represented in the effort of psychopathologists in respect to neurotic patients. Rather it has been our effort to acquire an objective recognition of the physiological substrate of conditionings already in force among ourselves as elements in a community or species which in the course of its development and descent has been subordinated to long accumulated habits of conditioned feeling and thinking. Concomitant with this recognition our endeavor has been to subordinate these secondary processes once more to the primacy of the organism as a whole.

It might appear that such an undertaking would be even more difficult and more complicated than the laboratory attempt to condition animals inter-individually as in our hypothetical experiment. It might readily be thought that to undertake to attain an objective grasp upon processes which have acquired a subjectively conditioned impetus over man's organism that reaches back over millions of years is a visionary and impossible task. So it would be but for the circumstance that this conditioning within man is, after all, but an acquired trait, that even to-day after these millions of years of our conditioned tradition each

individual on being born into the world of human interchange has to be subjected to special and repeated training in order that he be conditioned to function in accord with this partitive social pattern operating everywhere about him. Notwithstanding this circumstance the effort to bring to objective awareness and offset the tendency to man's symbolic conditioning has been no light undertaking. After sixteen years or more, however, of daily living experimentation in challenging from moment to moment the dimensionless basis of adaptation that characterizes our normal interreactions, this homogenic premise of human motivation has begun in no small measure to yield to the altered frame of reference inherent in the total organism.

CHAPTER XIII

FURTHER MECHANISMS IN PHYLOPATHOLOGY

As I said in the last chapter, we are faced with the need of an altered frame of reference in our study of man's behavior-disorders. In accord with phylobiological studies of the behavior of man in social groups or communities, this more comprehensive frame of reference comprises the phylum of man as a whole. In speaking of the phylum of man I have not in mind a collection of separate organisms. I have in mind a principle of biological unity that motivates and governs identically the behavior of the individual organisms composing the species as a whole—a principle that is simultaneously active in one and all individuals, that definitely exists in the single organism but not apart from or in the absence of the total phylum; in brief, a phyletic unity-principle that finds its prototype in the biological unity-principle of the single organism.[1] Of course with us all there is the inevitable objection that this broader conception of behavior is destructive of individuality. But this is only the individual's partitive concern for his partitive individuality. Real individuality—individuality in the sense of coördinated behavior—expresses itself only through this phyletic principle of motivation and not through the

[1] The significance of organismic concepts has been emphasized by Whitehead in his philosophical survey of scientific developments. He shows that this point of view is valid not only in biology but that it requires to be extended to other fields of science. Whitehead, A. N., *Science and the Modern World,* New York, The Macmillan Co., 1925.

In this connection Tönnies' distinction between *"Gemeinschaft"* and *"Gesellschaft"* is of interest. He discriminates between native-biological factors and factors of a social-rational nature in the formation of groups. However, in referring to emotional and instinctive motivations he naturally lacks a basis for analyzing the extent to which symbolically conditioned elements have entered into those behavior dispositions which are primary and basic. (Tönnies, Ferdinand, *Gemeinschaft und Gesellschaft—Grundbegriffe der reinen Soziologie,* Berlin, Verlag Karl Curtius, 1926.)

competitiveness and homogenic striving for "originality" as commonly expressed in our image-conditioned individualism.[2]

On the basis of principles which are parallel to those of Coghill, though arrived at independently of him, I have attempted, using Pavlov's early experiments as an analogy, to indicate the nature of the physiological occasion for the neurosis in the individual.[3] But a complete understanding of neurotic and psychotic behavior is not to be arrived at by a study of individual behavior as an isolated phenomenon. Experiments in group- or phylo-biology have indicated that the functional neuroses implicate society as a whole. More important still, these experiments have indicated that the neurosis of the individual is a mere overt, symptomatic expression of a physiological disorder existing in man as a race or species. So that the physiological seat of this disorder of behavior does not reside alone in the single individual; it resides also and primarily in an intrinsic system of individuals coördinated into a bionomically unitary species. In addition, these experiments have indicated that the partitive or word-conditioned ambit, which has now become systematized socially, has tended through its over-use to cloud the sovereignty of man's phyletic behavior-principle. The result is that the phylum of man has become disaffected throughout the entire range of its partitive or index-conditioned adaptation. But in order that we may have a clearer understanding of this phyletic principle, it will be necessary to reëmphasize the reactions of the single organism.

[2] "Man was not individualised as we are. The unit of humanity was not the physical individual, and so the physical feelings of that individual were not decisive. The unit was the society, group, horde or nation—and when it acted, then all its constituents were united and mixed in it, as are the cells and leucocytes in the body, though individual, united and moved by the unity and direction of the undivided organism. In such a society the constituents are so tied together that it is easier for them to endure the severest attacks on their persons than to loose their ties." (Heard, Gerald, *The Emergence of Man,* New York, Harcourt, Brace & Co., 1932, pp. 8–9.)

[3] Coghill's work does not, of course, deal with man and his partitive or image-affective relationships introduced inter-individually through the accidental interpolation of verbal images or conditionings. It should be mentioned too that throughout this study I have used side by side the concepts and terminology employed by Coghill and the concepts and terminology which have been used specifically by the behavior psychologists in relation to conditioned reflexes. The reader must make allowance for this lack of sharper demarcation between the literal implications on the one hand of Coghill's conception of the organism as a primary and continuous principle of unitary action, and on the other of Pavlov's interpretation of the organism's integration by virtue of acquired reflexes.

The growing organism is a self-activating entity that first makes contact with its environment on the basis of the behavior-principle of total action. In man's adaptation to his external environment the organism's primary relation is a relation between the total internal environment and the total external environment.[4] Outstanding among these primary, bionomic relations of man there is the organism's central constant or the unity-principle that is maintained throughout the domain of man's internal, functional processes. In man's adaptation to his external environment the organism's balanced behavior is dependent upon keeping inviolate this central constant that resides in the total action-pattern of the organism as a whole.

With the development of partial or individuated contacts, there finally emerges the special exteroceptive system which relates the organism to its external environment through its partitively conditioned system of words or symbols. The partitive system, as I have stated, is the autogenous system of symbolic processes whereby man thinks. Now in connection with the development of this constellated system of images that constitutes man's thinking processes, there are the unvarying physical principles of the external world to which his symbol-constructions must at all times rigidly conform. Man *must* say that 2 and 2 make 4; he cannot say that 2 and 2 make 5 or 7. This is called logic and the laws of man's logic determine the consistency and the dependability of his reasoning. But these consistent physical principles are external to the organism's projective, index-conditioned mechanism, and it is only their consistent symbolic appropriation by the organism that has constructed for man the logical world of outer relations. It need hardly be said that these principles which are primary and inherent in the outer environment are also primary and inherent within man's own internal physiology. But in his homogenic conditioning man now merely conforms to this outer bio-physical pattern by means of the symbol-forming apparatus mediated through the cortex. While his internal structure is organismically one and continuous with the external structure about him, man has almost wholly substituted for this primary bio-physical relation of continuity between his own organism and the external environment a mecha-

[4] Cf. pages 251–252.

nism that vicariously serves him to-day merely to look at and appraise extra-organically or mentally those bio-physical laws and consistencies which are equally resident within and which equally motivate his own organism. Upon no one feature does the understanding of the present thesis depend so largely as upon this distinction between the organism's primary and consistent continuity as a whole with the primary and consistent world of external phenomena about it on the one hand, and on the other the organism's relation to the outer phenomenal world as derived through its mental or picture-forming function in respect to its environment. It is this basic distinction which was presupposed in our description earlier of the organism's subjective reaction in its function of cotention and the subjective reaction that characterizes the organism's attentive processes.[5]

We have here a situation in which the organism's adaptation to the external world involves not only a central constant intrinsic to the total organism, but also a constant that resides in the homogenic, symbolic system of the organism and that under proper guidance makes possible the orderly evolution of man's thinking in relation to the external world. In this setting the homogenic or word-conditioned system occupies a unique position. The central constant or the unity-principle of the organism's total action-pattern is an active, growing principle, while in relation to the organism the unity-principle of the external environment is relatively passive and inert. *In its relation to the organism as a whole* man's symbolic system is a partial pattern of the cerebral cortex and, being under the sovereignty of the organism's total action-pattern, it molds its impressions of the external world in accord with the organism's intrinsic constant. *In its relation to the external environment,* the homogenic, symbolic system conforms to the bio-physical consistency of the external world. It does so, it is true, only partitively or symbolically, but within the restrictions of this sign- or word-conditioned adaptation it conforms accurately to the rigid unity-principle of the external physical world in which 2 and 2 make 4. In this circumstance the unity-principle of the external world is passively responsible for the manifest, formal character of the organism's symbolic sys-

[5] Cf. pages 116, 215–216.

tem of reactions. There is thus established in the cortex with its partial reaction-patterns a behavior-principle which for convenience I shall call the organism's extrinsic constant because of the fact that it conforms homogenically or symbolically to the unity-principle of the external world. The physiological motivation or activation of this extrinsic constant is, however, always under the sovereignty of the organism's intrinsic central constant. Briefly, the organism's extrinsic constant is decisive for the nature of the secondary, symbolic system of word-conditioned reflexes, while its intrinsic constant is decisive for the nature of the organism's primary, total reactions.

We are only too familiar with man's ineptitudes of observation and adaptation toward the external world where his contact is mediated by the organism's partitive system and its extrinsic constant. This inefficiency of adaptation may be noted in man's slow transition from the arbitrary symbols of the astrologer to the mathematically exact and objectively controlled symbols of the astronomer. Similarly, in what appear now to have been the sheer allegories of the alchemists we may trace the wide interval between the early stage of man's outer adaptation and growth, and the stage of his adaptation represented in the discoveries and classifications of modern chemistry. This transition that marks man's development toward a finer, more controlled observation and adaptation in respect to the external world as gauged through his extrinsic constant is equally demanded in the altered frame of reference entailed through the requisite refinement of man's intrinsic constant of behavior as it relates to the world of his own intrinsic processes. The roots of man's life as a species are indistinguishably common to mankind the world over, and a genuine refining of man's homogenic outlook cannot be accomplished apart from an equal nurture of the orthogenic basis within living processes. From the altered frame of adaptation, therefore, that inheres in the total phylum of man, awareness is not limited to his relatively inert, homogenic processes. It is consummated only through the integration of the homogenic within the orthogenic processes of man as a species.

Intricate as may seem the situation described between the organism's two bionomic systems with their corresponding con-

stants, there is really no difficulty fundamentally; it is merely a matter of the balanced functional relation between the intrinsic and the extrinsic systems of the growing organism. What difficulty there is lies solely in the unfamiliarity and unaccustomedness of the student in dealing with processes occurring within and embodying the expression of his own internal organism. For these processes, being the expression of a primary physiological reaction affecting the race, are not accessible to analysis or introspection as facilitated in those domains of inquiry which involve the organism's partitive system and its extrinsic constant. Our object of inquiry is nothing else than ourselves as total organisms, and as students of human reactions we are under the necessity to realize that we are in very truth invalids seriously attempting for the first time, as best we can, to make objective the nature of our own invalidism. As it is the nature of our infirmity that it consists precisely of a subjective or empathic confusion between the domains which govern our patterns of reaction as an organic whole and our subsequently acquired partitive or symbolic patterns of reaction—a confusion that is internal to us—the task is not an easy one. For even in the process of our effort to understand ourselves more objectively we must invoke at the same time the symbolic process in which we found embodied subjectively the very pathology which it is our effort to understand in objective terms. In one's attempt to verify an unaccustomed thesis with its new and altered frame of reference the difficulty lies not so much in establishing the new position as in disallowing habits of thinking and adaptation that adhere to the old. The partitive or symbolic persona that is secondary and index-conditioned, and whose function it is to *look at,* is never competent to assume sponsorship for the stereognostic adjustment that is basic and original for the organism as a whole. Of itself alone it lacks the total initiative requisite to total verification. It was only as Columbus set forth and sailed half-way round our hitherto flat and non-circumnavigable world that the earth became actually round and circumnavigable—that the path that once set out upon a flat plane was replaced by the geographic curve that now forms our transatlantic steamship lanes.

These two fields of man's behavior, then, the intrinsic and the

extrinsic, are as distinct as the constants which preside over them. While the extrinsic, partitive system is, as I have said, under the sovereignty of the intrinsic, total system, the activities of these two fields are not interchangeable, nor, under conditions of the organism's physiological balance and health, can they encroach upon each other. In their respective domains, it is the primary tendency of each system to respond to its proper stimuli with entire consistency. It is, however, when the two systems do encroach upon each other, as is the case with man to-day, that difficulty arises. When the intrinsic system presumes upon the extrinsic or partitive system, the result is undependable, illogical thinking; when the extrinsic or partitive system presumes upon the intrinsic system, there is undependable, divisive feeling. In either event, what really takes place in greater or less degree is both illogical thinking and divisive feeling, for there occurs an imbalance of the functional behavior of the organism as a physiological whole. This is why both the thinking and the feeling processes of man under our present predominantly symbolic (partitive) tendency of adaptation show inadequacy, and why the behavior of the organism is neurotic.[6]

In this interplay between the intrinsic and extrinsic constants, between the constant governing the organism as a total behavior-process and the constant of the partitive system of the organism —the system responsible for man's symbolic thinking processes —it is clear that we have not to do with one individual or with the passing whim of one individual as it relates to this, that or the other circumstance or event before him. We are confronted with broad biological principles of evaluation and with their influence upon the behavior of man as a phylum. In his observations of Amblystoma Coghill found that all partial reactions are but overt expressions of the total pattern in action. Primarily and intrinsically there is no action in the absence of the total pattern. Similarly, according to investigations in phylobiology, the behavior of the individual man as a part is but an overt expression of the phylum man as a whole. Biologically there is no reckoning with the individual apart from the phylum. But I should like now to consider certain altered outlooks with reference to

[6] Cf. pages 122–123, 185–186.

the individual man in accord with phylobiological principles of behavior. To this end it will assist us to define the two systems —the extrinsic, partitive or exteroceptive system and the intrinsic, total or proprioceptive system—from a position that now permits their envisagement upon a more comprehensive basis.

The intrinsic system is a primary condition of the phylum that is transmitted from generation to generation. It functions always as a total organic process that strives to maintain the organism's behavior-balance as a whole in respect to the total environment. With reference to the individual, the intrinsic system is a primarily integrated total behavior-pattern which constitutes subjectively the individual's *organic persona* or *identity*. It is this total pattern of identity within the organism, this organic persona, which embodies a central constant or principle of motivation within the individual and the phylum.

The extrinsic, partitive system of behavior, on the other hand, is built up of the separate elements or stimuli which flow into it in the form of gradually acquired items or parts. It builds up secondarily its own partial behavior-system in conformity with the physical constancy governing the external world of phenomena. In this rôle it represents subjectively a *pseudo-persona* or *pseudo-identity* which, within its own symbolic system, may function quite consistently in relation to the world of external reality. But this partitive identity represents a secondary, peripheral system of the organism that possesses only a secondary, peripheral reaction-constant. It does not constitute, as is generally assumed among us unconsciously, the organism's intrinsic centre of gravity or primary principle of motivation. This extrinsic system is gradually acquired only within the life span of each individual. It is not transmitted organically from generation to generation, and cannot therefore do substitute service for the primary, sovereign system of behavior that belongs to the organism as a generic whole. Where the individual's organic centre of gravity is vicariously shifted to the peripheral reaction-constant represented in the secondary, partitive pattern of behavior, where it is shifted to its pseudo-identity or -persona, there arises confusion in the organism's reaction, both individually and socially.

With this more encompassing delineation of the two systems,

let us review for a moment their relation to each other. As I have indicated, the intrinsic or total system represents basically the prior, sovereign and more active principle, while the extrinsic or logical system represents a secondary, reflexive and repercussant sphere of behavior. The extrinsic (partitive) system is conditioned, while the intrinsic system is always unconditioned or, if one prefers, totally conditioned. These two systems now tend to approximate each other too closely and to crowd unduly the respective functions of them both. In the conflict of function that follows, the symbol-activity of the partitive system tends to condition partitively or symbolically the primary, unconditioned feeling-basis of the intrinsic or total system. This trend of events is responsible for the false, unwarranted routing of total-action behavior through the partitive segment of the cortex. This inevitably results in a deflection and decussation of the organism's cotentive and attentive processes as they relate to both feeling and thinking. In other words, the individual's organic centre of gravity is vicariously shifted from its primary central constant to the peripheral reaction-constant represented in the organism's secondary, partitive pattern of behavior. Through this shift the organism's sovereignty tends to become identified with the mere partitive, symbolic persona.[7] Possessing none of the quality of a central constant whose function it is to equilibrate and to adjust the total organism to the total environment, this partitive persona acquires a purely spurious dictatorship in respect to the organism's behavior as a total process. There follows thus a quite general confusion, individual and social, which, as I have said, takes the form both of illogical thinking and divisive feeling.[8]

It is something of this sort which takes place neurologically in animals, on a minutely restricted scale, with the induction of the artificially conditioned reflex. There is an invasion of the proprioceptive system by the restricted reactions of the cortical, exteroceptive system. In a dog or other animal the organic stimulus naturally associated with salivation, for instance, is the sight or still more the smell of food. The olfactory or the visual impression invariably associated with food becomes for the

[7] See note 2, page 46. [8] See note 6, page 341.

animal an inalienable property, quality or part of the food itself, and in presenting to a dog this property of food—its smell or the visual impression naturally associated with it—the dog naturally responds with the physiological reflex of salivation.

If now any artificial stimulus is consistently given a dog together with the presentation of food, this stimulus gradually comes also to stand vicariously to the animal as a property, quality or part of the food itself. The result is that in response to a stimulus as bland and as inert from the point of view of alimentation as the sound of a bell or the stroke of a metronome, the dog's behavior comes to possess in its deflected, homogenic reaction all the organic color and vitality with which it reacts to food itself. This means that the animal's total reaction-pattern, its organic persona or primary principle of motivation, has been artificially brought under the domination of a quite symbolic (partitive), mechanical or cortical stimulus. It means that a normally inert, a purely index stimulus, has artificially acquired an affective coloring or quality that is wholly alien organically to the stimulus that incites it.[9]

I said that the conditioned reflex possesses all the color and vitality of the organism's total spontaneous response. This statement needs qualifying. It applies, of course, only to the precise moment of the response, and then only relatively.[10] In strictness all that may be said is that some portion of the color and vitality of the total response with its instinctive emotional components has been attached to a symbolic excitation or to an index-stimulus. In the generic conditioning of the dogs described in the last chapter, such inter-individually induced responses, however colorful momentarily, would, unless reënforced, endure only for a period of a few minutes and immediately fade again. Being soon overspread and replaced by the spontaneous reactions of the organism as a whole, these artificially conditioned reactions would not last. But with man the case is different. Man's gradual conditioning generically to verbal, gestural or other symbolic stimuli is a process that has been taking place inter-individually among us

[9] Cf. pages 276, 299.

[10] Hollingworth, H. L., *Psychology: Its Facts and Principles,* New York, D. Appleton and Company, 1928, p. 59.

over the million or more years of our increasingly dominant adaptation socially.[11] These racially induced reflexes (the organism's symbolic or partial reaction-patterns) have for ages been automatically renewing themselves from generation to generation throughout the process of man's symbolic or partitive evolution, and naturally they possess a vitality which we could not possibly expect of reflexes which, according to our hypothetical experiment with animals, have been only momentarily induced in them.

Experimenting with word-conditioned responses as they occur in the human organism, it was found that the extensive vasomotor, glandular and visceral reactions which may be elicited in response to word-stimuli—stimuli which normally are completely inert as regards the total organism—invariably involve a vicarious shift of the secondary, partitive persona into the place of the organism's primary organic persona. It was found that through this shift from total to partial ambit the cortical, exteroceptive or secondary "I"-persona has attempted to assume a prerogative that is pertinent only to the organism as a totality.

A distinction should here be made between a conditioned reflex that involves an organic response and one that entails a merely appellative "association." The former is dynamic and affective, while the latter may be quite bland and indifferent in its resultant reaction. In the absence of the actual objects and their respective visual stimuli, the sound of the word "book" or "table" or "tree" may call up an affectively inert image of the book, the table or the tree. But a response to a word-stimulus possesses the character of an organically conditioned reflex, when, like the bell or the stroke of the metronome presented to the dog, the verbal stimulus or symbol is associated with such secretory, visceral and muscular responses as result from direct organic stimulation. With man this is the case where reactions pertaining to the secondary, symbolic persona encroach upon and assume an arbitrary sovereignty over the primary organic persona. So inert a stimulus as the word "book," "table" or "tree," as it comes

[11] Osborn, Henry Fairfield, "Recent Discoveries Relating to the Origin and Antiquity of Man," *Bicentenary Number of the American Philosophical Society's Proceedings*, 1927, Vol. LXVI, pp. 373–389.

to be sponsored by the conditioned "I," acquires an affective quality. Becoming "*my* book," "*my* table," or "*my* tree," it now readily elicits the more colorful reaction that commonly masquerades as an organic reflex or "instinct." [12] Under these circumstances, simultaneously with the presentation of such a normally inert word-stimulus, there may result reactions that affect the entire vasomotor and vegetative systems—systems of reaction which represent primarily the organism's total behavior-response and which normally serve for the preservation of the individual and of the species as a totality.

As explained in the preceding chapter, this overt usurpation of the total reaction-system on the part of the partial system is simple enough in reckoning with the conditioned response of salivation reflexly induced in the dog when presented with the sound of a bell of a given tone or vibration rate. Likewise in man the situation is quite simple where the conditioning stimulus—a sign or word—produces a secretory, visceral or other organic response. But, as we know, in man we have to deal with an inter-individually activating system of word-conditioned reflexes. Within the species man all individuals are constantly being conditioned reflexly, homogenically, by all others. But we shall return later to this phyletic implication.

Of course, when as a result of repeated responses to the bell there is established neurally in the dog the organic reaction constantly associated with it, the dog is brought to cling tenaciously to the vicarious stimulus represented by the bell. What was at first the mere cortical stimulus "bell" is now his meat and drink. The dog clings cortically to the bell because it is his dinner bell. But man clings cortically to a whole system of meat and drink impressions, and not only to impressions of meat and drink but to the smile and the scowl, the wink and the frown, and to the endless emblems or social images of favor and success on the one hand, of disdain and rejection on the other. He reacts in this wise because throughout a long period of his evolutionary descent these exteroceptive signs and signals have slowly been fashioned into a system of mergents or into an ambit which has gradually become the improvised centre of his personality—the reflexly

[12] Cf. pages 161–162.

conditioned identity or false central constant through which he now vicariously (homogenically) lives and moves and has his being!

In a sphere so important to man biologically as that of nutrition —a sphere belonging to the organism's reaction as a total process —we find that, owing to the preponderance of reflex verbal images or word-conditionings now artificially induced, man is stimulated to respond to signals within this sphere that are organically as little connected with food as the bell that stimulates the process of alimentation in the dog. Where, in the case of the dog, the natural stimuli to eating have been transferred to a single, artificially devised stimulus, in man the natural incitements to eating have been artificially transferred to a whole system of signs and signals, that is, to word-images or verbal stimuli, and through these outer indices he is now reflexly conditioned to food-intake. Words by the thousand have come to stand as signals for the organism's natural nutritional needs, and the originally organic reflex of alimentation is to-day largely confided to the sponsorship of stimuli which, however efficient mechanically, have been only secondarily, homogenically acquired.

As mentioned in Chapter Eleven the same situation holds in still another important domain of those reactions of man that belong primarily to the organism's behavior as a total unconditioned process, namely, in the domain of sex. Here, as the result of phylopathological inquiries, we find that throughout the species man there exists this same preponderance of artificial stimuli with their concomitantly conditioned reflexes. We find that these secondary stimuli are to an overwhelming degree now substituting for the organism's natural stimuli to mating and reproduction.[13] The words or names, for example, associated with the various body-zones as they are symbolically represented in this or that superficially projected impression, constitute an entire social system of verbal images or word-stimuli; and these word-images now operate to a preponderant degree in stimulating artificial sexual reactions in the individual and in the community.[14] These verbal images or

[13] See note 7, page 70.

[14] The sexual symbols in which the literature of psychoanalytic case-histories abounds sufficiently attest not only the absorbing interest of the neurotic patient in these vicarious, partitive images, but the equal interest that exists normally

word-stimuli have now come to condition the organism reflexly, secondarily, and thus to take the place of the primary stimuli to sex function which naturally call forth the organism's mating response as a total unconditioned reaction existing under the sovereignty of the organism's primary pattern of response. It is these commonly distorted sensibilities, these artificial conditionings within the sphere of man's sex life of which the novelists, the theatrical and motion-picture producers, the writers of popular songs and the indefatigable crooners of them make profitable game.

For some time now it has been the accepted theory in psychopathology that the sphere of sex—a behavior-reaction belonging to the organism as a whole—has been subordinated to inhibition or repression through the accident of mere wishful, affective, psychic impressions. Experimental investigations of human reactions as they occur in groups or communities, however, give indication that, contrary to prevailing psychological assumptions, total, coördinative, unconditioned reactions are not subject to repression or inhibition. What is symptomatically known as repression is merely a negative variation within the sphere of those libidinous (erotic) interests that have already been shifted to the partitive and conditioned mode and that are now falsely assumed to constitute man's primary sex drive. There is evidence that only the secondary, partitive or conditioned responses of the organism are subject to what has been referred to psychologically or symptomatically as "repression." [15]

The absurdities to which the scientific mind can be brought through its failure to appreciate the distinction between the partitive, symbolic, extra-organic mode of man and the mode expressive of man's primary, total patterns of response is nowhere better illustrated than in the domain of sex with the endless

(extra-organically or unconsciously) among both the writers and readers of this purely partitive type of material. Obviously, in their own secondarily conditioned plane of reactions, the onlookers at this clinical, homogenic fantasia—both those who write and those who read—are occupied to a no less obsessive degree with these allegorical reminiscences in all their infinite and undulled variety. Cf. page 128.

[15] Burrow, Trigant, *The Social Basis of Consciousness—A Study in Organic Psychology,* International Library of Psychology, Philosophy and Scientific Method, London, Kegan Paul, Trench, Trubner & Co.; New York, Harcourt, Brace & Co., 1927, pp. 156–159, 163, 193.

libraries of partitive literature that have been amassed on the subject, particularly in recent years. A widely read treatise—a veritable *vade mecum* on "love, sex, morality," etc.—deals throughout 250 meticulous pages with technical descriptions of the method and art of coitus. But the chipmunk or the common housefly, in coöperation with its mate, could give the writers of such treatises cards and spades and still walk away with the honors when it comes to a test of their respective prowess in this domain. What the books on sexology are trying to do is to handle partitively what is primary and total. Through the employment of attentive, partitive processes the homogenic writers of such dissertations are forever attempting to *talk about* and *look at* a function of the organism that is primary and intrinsic to the organism as a whole. They do so perforce because, as elements in a partitively constellated social system, they themselves have lost functional continuity with those cotentive, nonverbal processes which function spontaneously under the integral sovereignty of the organism's cotentive principle of motivation. It is indeed a commentary on the highly prized, index-conditioned mind of man that he must be instructed in those functions which in any other animal, however lowly, are performed naturally and without benefit of text-book!

Our investigations give indication that in the domain of sex those reactions which have been interpreted as a response to inhibition or repression are in reality precisely those reactions which have been caused through the secondary induction of negative index-conditioning. We saw in Chapter Twelve that in addition to the index or homogenic stimulus through which a motor response is *elicited* in the organism there is the index or homogenic stimulus through which motor or other responses are *interdicted* in the organism.[16] We saw that what are ordinarily, "normally," seen in the empathic responses of the human organism as "satisfaction and denial," as "gratification and repression," are merely the positive and negative forms of the organism's partitive, homogenic response to index or verbal commands.

It needs again to be emphasized that it is not only the "bad" that is extra-organic but equally the "good." It is not only the

[16] Cf. pages 308–309.

repressive or negative features within the extra-organic domain (inhibition and sexual abstinence), but equally the presumably expressive or positive features (our habitual autoerotisms, single or reciprocal—man's so-called "normal" sex activities whether in their homo- or hetero-sexual constellation) that represent an affront to the sovereignty of the organism as a total reaction. It is not only our dislikes but our likes, not only our discomforts but our comforts, not only the displeasures we experience but also the pleasures, that occasion this affront. For the integrity and the basic supremacy of man's organism as a total pattern of action is equally affronted in our satisfactions as in our repressions, in our elations as well as in our depressions, in our so-called gains quite as much as in our losses, in the smug conventions we embrace as peace no less than in the horrors we theoretically eschew as war the while we heartily espouse them. It is, therefore, only the organism's extra-organic, homogenic reactions, not its primary orthogenic reactions, which present the response that has been described as "inhibition" or "repression" and that has been erroneously attributed to the organism's instinct of sex as a total behavior-response. To repeat, repression and inhibition can affect only those reactions which have been secondarily shunted into the organism's partitive system of responses. Such a total unconditioned reaction-system as sex—an instinct upon which the phylum is dependent for its continuation—can no more be subject to psychic repression than can the total unconditioned reaction-system which safeguards the organism's basic nutritional needs be subject to such extra-organic, index-conditioned or psychic determinants.

What really occurs apparently is that, where we recognize the presence of repression or neurosis in the human organism, there has come about, as in the differential reflexes in Pavlov's dogs referred to earlier, a too close approximation of the system of word- or symbol-conditioned reflexes to the system of responses that belongs to the organism as a total action-pattern.[17] There is a too close approximation of the partitive, homogenic system of reflexes to the total, coördinative system, with a resultant embarrassment of function caused by an overlapping and conflict

[17] Cf. pages 169, 198–199.

between the partitive sphere of reactions and the total organic sphere. The conditioned reactions, which are induced in response to the *words* or index-stimuli that *symbolize* sex, conflict with the reactions which pertain to the sphere of sex as an unconditioned (or totally conditioned) pattern of response. It is this conflict occurring individually and socially which, when seen in the psychic or extra-organic reactions of a psychoanalytic patient, shows itself symptomatically in the artificial conjunction of affect with the symbol- or word-conditioning stimulus to which the affect has become artificially attached.[18]

Similarly, throughout the entire sphere of those interests which serve man's economic security, the function which naturally contributes to conserve the organism's health and its needs as a total orthogenic behavior-process has been socially replaced by reactions which represent a partial, homogenic response to mere word- or sign-conditioning stimuli. In these homogenic reactions the organism has been vicariously stimulated to an exorbitant accumulation of unessential and irrelevant image-substitutions and appearances with the result that man has now gathered to himself a host of acquisitions which not only do not assist the healthy functioning of his organism but are a definite burden and impediment to it. The appearance we symbolize as success, the image-substitutions we accept as our personal virtues or faults—generosity, industry, honesty, or their opposites—and the numberless things we own not for our needs' sake but for mere outer appearances or for the delectation of our neighbors, are among the many accumulations which man carries about with him as needless and deterring excess baggage.

In place of clothing with its natural possibilities of protection, comfort and charm, we caparison ourselves in the monstrous disfigurements of style, the mere caricatures of apparel, which the prodigal dress designers arbitrarily impose upon us. In place of houses calculated to serve for needed shelter and convenience we have the elaborate constructions designed primarily, like our clothes, for "others" to see. Instead of the activities of play and common recreation we invent the spectacles we call "plays" and sit for hours in the stuffy auditoriums of theatre and cinema

[18] Cf. pages 144–145, 305–306.

identifying ourselves with the rôles that have been laboriously designed for other people to enact. Our vicarious extravagances in the sphere of nutrition present the most marked deflections of all. Here the impulse to eating which arises from the organism's natural hunger has been almost entirely supplanted by the artificial, obsessive stimulus to taste every variety and concoction of food and drink. The result is that a healthy, balanced, symmetrical physique is the rarest exception among us. In the midst of this wide-spread *dementia competitiva* "fat and forty" is a slogan that is not only apt but that possesses wide and significant bionomic import! [19]

It has been Freud's attempt to cope with those systematized impactions—those partitive, wishful replacements for the organism's function as a whole—as they occur in the sphere of the individual's sex life. How rich a quarry is to be found in this department of vicarious affects none can better attest than Freud and his school. When, however, we come to examine man's disorders of behavior in their wider social reach we find vicarious affect-processes that are quite as marked and quite as pathological as those occurring in the deeper recesses of the individual "unconscious." Whether we "like" it or not, we have a phyletic neurosis, and it is our urgent need to re-centre the phyletic imbalances actuating our outer social processes. For it would appear that all departments of man's interests and of his needs have been dislodged from their primary intent and function to make way for mere homogenic indices or for the superficial appearances of the organism's basic behavior.

Indeed the individuals of the species are now automatically inured from birth to this socially conditioned system of homogenic word-reflexes. For in his processes of feeling and thinking man has for thousands of generations been subordinated to preconditioned word-reactions of which he is completely unaware, but which now everywhere dominate him through an unconscious

[19] Some recent writers have tried to apply psychological methods to our social uncertainties and vacillations of value and to collect more exact data in regard to them.

Thorndike, E. L., *The Psychology of Wants, Interests and Aptitudes,* New York, D. Appleton–Century Co., Inc., 1935.

Poffenberger, A. T., "Psychology and Life," *Psychological Review,* 1936, Vol. 43, pp. 9–31.

process of social systematization. However unsuspected by us, we who are wayfarers along the path of man's normal adaptation are necessarily descended from long accumulated systems of conditioned word-response and therefore in our approach to the problem of man's behavior we are ourselves already neurotic. In short, the species man is already racially conditioned to conflicting responses or to neurotic reactions.[20] In the word-conditioned reflexes externally induced in the dog we have but a diagrammatic analogy to the actual condition existing biologically within the organism of man as a species. Where man as an individual experimenter induces in the individual dog a bell- or word-conditioned reflex and at the same time presents to the dog a second stimulus which clashes with the first because of their

[20] D. H. Lawrence in his review of my book *The Social Basis of Consciousness* manages to speak my own language so much better than I speak it myself that I am taking the liberty of quoting from his comments.

"The analyst is just as much fixed in his vicious unconscious as is his neurotic patient, and the will to apply a mechanical incest-theory to every neurotic experience is just as sure an evidence of neurosis, in Freud or in the practitioner, as any psychologist could ask . . . The real trouble lies in the inward sense of 'separateness' which dominates every man. At a certain point in his evolution, man became cognitively conscious: he bit the apple: he began to know. Up till that time his consciousness flowed unaware, as in the animals. Suddenly his consciousness split . . .

"What man really wants . . . is a sense of togetherness with his fellow men, which shall balance the secret but overmastering sense of separateness and aloneness which now dominates him . . . What must be broken is the egocentric absolute of the individual. We are all such hopeless little absolutes to ourselves. And if we are sensitive, if it hurts us, and we complain, we are called neurotic. If we are complacent, we enjoy our own petty absolutism, though we hide it and pretend to be quite meek and humble. But in secret, we are absolute and perfect to ourselves, and nobody could be better than we are. And this is called being normal . . . The moment man became aware of himself he made a picture of himself, and began to live from the picture: that is, from without inwards . . . If we could once get into our heads—or if we once dare admit to one another —that we are *not* the picture, and the picture is not what we are, then we might lay a new hold on life. For the picture is really the death, and certainly the neurosis of us all. We have to live from the outside in, idolatrously. And the picture of ourselves, the picture of humanity which has been elaborated through some thousands of years, and which we are still adding to, is just a huge idol. It is not real. It is a horrible compulsion all over us . . .

"As a matter of fact, the mass is more neurotic than the individual patient . . . The mass, the normals, never live a life of their own. They cannot. They live entirely according to the picture . . . Each lives for his own self-interest. The 'normal' activity is to push your own interest with every atom of energy you can command. It is 'normal' to get on, to get ahead, at whatever cost. The man who does disinterested work is abnormal. Every Johnny must look out for himself: that is normal. Luckily for the world, there still is a minority of individuals who do disinterested work, and are made use of by the 'normals' . . . The last great insanity of all, which is going to tear our civilization to pieces, the

too close approximation, the problem presented is a simple one. But the problem in which man as a race or species is already subjectively embroiled through the too close apposition within his own organism of two entire systems of reaction—the one partitive and conditioned in function, the other total and unconditioned—is a far more adult, a far more difficult problem. This problem, however, is not the problem of any individual man but of man as a community or phylum.

What man has attempted to do in the laboratory of animal experimentation through the employment of differentially conditioned reflexes has been to bring about the simultaneous approximation of two artificially induced reactions, thus creating artificially a condition of neurosis within the individual animal. But what man is now required to do in the quite normal, everyday laboratory of human experimentation and adjustment is to

insanity of class hatred, is almost entirely a 'normal' thing, and a 'social' thing. It is a state of fear, of ghastly collective fear. And it is absolutely a mark of the normal. To say that class hatred *need not exist* is to show abnormality. And yet it is true. Between man and man, class hatred hardly exists. It is an insanity of the mass, rather than of the individual . . .

"Even sex, to-day, is only part of the picture. Men and women alike, when they are being sexual, are only acting up. They are living according to the picture . . . To-day, all is image consciousness. Sex does not exist, there is only sexuality. And sexuality is merely a greedy, blind self-seeking. Self-seeking is the real motive of sexuality. And therefore, since the thing sought is the same, the self, the mode of seeking is not very important. Heterosexual, homosexual, narcistic, normal or incest, it is all the same thing. It is just sexuality, not sex. It is one of the universal forms of self-seeking. Every man, every woman just seeks his own self, her own self, in the sexual experience. It is the picture over again, whether in sexuality or self-sacrifice, greed or charity, the same thing, the self, the image, the idol: the image of me, and norm! . . .

"And this is what the analyst must try to do: to liberate his patient from his own image, from his horror of his own isolation, and the horror of the 'stoppage' of his real vital flow. To do it, it is no use rousing sex bogeys. A man is not neurasthenic or neurotic because he loves his mother. If he desires his mother, it is because he is neurotic, and the desire is merely a symptom. The cause of the neurosis is further to seek. And the cure? . . . The cure would consist in bringing about a state of honesty and a certain trust among a *group* of people, or many people—if possible all the people in the world. For it is only when we can get a man to fall back into his true relation to other men and to women that we can give him an opportunity to be himself. So long as men are inwardly dominated by their own isolation, their own absoluteness, which after all is but a picture or an idea, nothing is possible but insanity more or less pronounced. Men must get back into *touch*. And to do so they must forfeit the vanity and the *noli me tangere* of their own absoluteness: also they must utterly break the present great picture of a normal humanity: shatter that mirror in which we all live grimacing: and fall again into true relatedness."

Lawrence, D. H., "A New Theory of Neuroses" (*The Social Basis of Consciousness,* by Trigant Burrow), *The Bookman,* 1927, Vol. LXVI, pp. 314–317.

separate two already established and naturally evolved systems of reaction that have arisen within himself. Each of these systems, the orthogenic and the homogenic, holds, of course, an entirely legitimate place in the scheme of human evolution, but when these two systems are brought into too close contact, as is the plight of man to-day throughout the phylum, there is caused a confusion and impairment within the physiological function of man's organism as a total behavior-reaction. Viewing the problem of the individual neurosis from this altered frame of reference, the manifestation of the individual's lack of coördination or of bionomic balance is seen to be the mere symptom of a more basic problem which may be accurately observed only as the individual is considered as an integral and continuous element within a total phylum.

We have yet to consider the circumstance that the total action-pattern, which is laid down identically in the neuro-embryologic structure of all individuals throughout the phylum, is the primary motivation not only of the behavior of the single organism but of the behavior of a phylum of organisms. We have yet to take into account that in a biologically inclusive organismic sense our understanding of human behavior is contingent upon our understanding of the behavioral relation existing commonly among the individuals of the species. The behavior of the individual organism becomes biologically significant only when it is considered as an overt expression of a behavior-principle that is phyletic.

According to our phylobiological observations of man, total-pattern phenomena are phyletic in principle and are wholly impervious to the accidents of repression or other psychological processes. In this view the organism of man as a total organismic reaction can come to maturity only with the maturation of an adult community of individuals in which survival of the single individual is biologically synonymous with the survival of the community or race as a whole. This community or racial maturity can be brought about only through the coördination socially of such orthogenic functions or total-action processes as are represented in the organism's primary instinctual drives and not through such secondary (homogenic), partial patterns as are

represented in the acquisition of learning and in the partitive adjustments of civilization generally. Here, then, we have primarily a condition of development that is common to all individuals and that presupposes not only a balanced behavioral relation between the internal and the external environments of the single organism, but also a balanced behavioral relation among the total patterns of action represented in the individuals that constitute the race or phylum. The total-action pattern represents thus a sovereign principle that is intrinsic to the balanced behavioral action of the organisms comprising the species as a phyletic whole as well as being intrinsic to the balanced behavior of the single organism.

While it is true that the total-action principle of the single organism and the total-action principle of the phylum are essentially identical in homogeneity of pattern, it is important to recognize also that the total pattern or unity-principle of the single organism presupposes the total pattern or unity-principle of the phylum. Just as there is no action in the single organism apart, as I have said, from total-pattern action, so in the phylum of organisms there is no balanced function of the single organism as a whole in the absence of a potential balance of function of the phylum. It is in this sense that the total-action pattern of the single organism embodies intrinsically the paradigm of the total phylum. In this more inclusive phyletic pattern of development we find the biological origin of the principle of growth which knits together the individuals of the race of man as an organic whole, and which despite our manifest partitive disunities—industrial competition, war and neurosis—insures its orthogenic solidarity.

Observing our own community reactions from this altered frame of reference, we are compelled to view the social behavior of man in an entirely different light from that to which we are now accustomed. We have already seen that in the single organism it is total action or intra-organic feeling that is primary and sovereign, while partitive action and extra-organic thinking are secondary and subordinate. So now, in our altered view of man as a biologically integrated phylum, the many socially systematized partitive adjustments of civilization are seen as proc-

esses secondary and subordinate to the organism's total phyletic principle of behavior. That is, the motivation that actuates the socialized partitive or word-conditioned reactions within the community is superficial and inept when compared with the motivation inherent in the biological process that underlies man's phyletic integration as a coördinated whole.

In dealing with behavior in its inter-individual form in contrast to the behavior of man as a phyletic whole I have not unadvisedly used the word "social" to describe this peripheral, extra-organic medium of contact. For being now entirely dependent upon partitive or symbolic measures of communication, the adaptation of man inter-individually has come to be predominantly associational, homogenic, psychic or "social." Without recourse, for instance, to the socially systematized use of words or language as a medium of contact, human society would be at a serious loss to accomplish the domestic, commercial, educational and general industrial activities of common daily interchange. In the present discussion of the organism as phylum, therefore, I use the word "social" to describe the organism's partitive or word-conditioned system in its inter-individual or socially systematized expression.

As I have already indicated, the partitive system is extrinsic both in its mechanism and in its behavior-motivation. In mediating between the central constant of the intrinsic or total system and the external world of physical phenomena, the partitive system reflects the characteristics of the external world, though organically it is a secondary system within and under the authority of the total intrinsic system. In that it negotiates with separate objects and conditions existing in the external environment, the partitive system is concatenated of the separate stimuli that flow into it and that consist socially of the several signs, sounds or words appropriate to the objects for which these outer signals stand. In this extrinsic function the partitive system represents a process of addition or accretion. It represents a collectivistic process in which symbolic indices or parts are systematically accumulated to form a collective symbolic whole in contradistinction to the organic whole represented in the principle of the phylum's biological expansion from the integrated whole to the individuated

part.[21] Within this system of inter-individual exchange, words are added to words until there results a socially, inter-cortically systematized nexus of stimuli and responses constitutive of the language of man. Words added to words make language just as bricks may be added to one another to build a unified, symmetrical and beautiful house, but there is here nothing of the quickening processes of integration that inhere in the matrix of living organisms. There is only the semblance of organic integration, only a function that is transitory, peripheral, adventitious. In brief, the partitive function deals only with separate items, indices or parts. These, however, it systematizes into a collective whole, and this collective systematization is accomplished, as has been said, under the sponsorship of the organism's dominant influence as a total integrative function. As this partitive system is merely collective and constitutes thus an acquisitive function which must be learned separately by each individual within the limited span between his birth and his death, this system is not primarily inherent within the phylum. This is why it is not organically transmissible from generation to generation, but possesses a quality of behavior that is only temporary, mechanical, adventive and, from a phyletic view-point, purely evanescent.

Thus in its collective function, this partial system of the organism embodies latently a trend that is diametrically opposed to the integrative trend of the organism as a whole. That is to say, this process of cortical accretion, through which we add one symbolized part to another to make a collective whole, lends itself to a programme of behavior that entails a disparate element in respect to the organism's primary total function. For through the interpolation of this symbolic function in man the partitive system attempts to assume arbitrarily a pseudo-organic, a pseudo-total authority over the behavioral life of man, and there occurs an irreconcilable conflict between the cortex acting in its additive or collective function and the total organism whose intrinsic function it is to preserve its basis of behavior as an organic whole. Where there is the interpolation of a mechanism of control whose principle is acquisitive, and where this interpolation tends to subordinate a mechanism whose principle is integrative and

[21] Cf. page 116.

sovereign, there results an inevitable clashing in incentive and aim within the body's system as a totality.

Individuals or elements that are integrated phyletically into an organic whole possess a basis of union and continuity that is quite independent of the aggregate represented in a collective sum of parts. Where such elements unconsciously relinquish among themselves this basic continuity of function and attempt to replace it with a basis of union that rests upon external signs and symbols, these individuals or elements have automatically introduced into their agreement a factor that is essentially discordant organically. In other words, where the organic principle of unity within the phylum is subordinated to an extrinsic, symbolic basis of agreement, discord becomes socially dominant among the elements assembled despite all the outer signs of covenant and armistice that may be invoked in the effort to cement sympathy and accord among them.

What is true organically and symbolically for the individual is equally true organically and symbolically for the phylum. The two and two that is consistently appreciated within my organism in its extrinsic agreement with the objective world is appreciated with equal consistency by individuals everywhere in their extrinsic conformity with the outer world. The 2 and 2 that make 4 for you and me make 4 for all individuals the world over. This consistency that holds in the objective world of beads, marbles, apples or men holds equally in the subjective world of signs, words, signals or symbols. Thus under the jurisdiction of the total-action pattern the thinking or symbolic processes of man as an intrinsically phyletic organism are consistent in function throughout the phylum. Were there the absence of affect—were there lacking the intermixture of elements of the total empathic system with elements of the partial or symbolic system—this word-agreement, this symbol- or language-consistency would hold also in our interrelational or community activities. It would hold in those interrelations and inter-activities through which men are guided toward a common purpose because of the total feelings held commonly among them. Through their phyletically common central constant their behavior would be maintained upon a principle of motivation that is basic and internal to the species. As

signs or words would under these conditions preserve their strictly symbolic, indicatory or appellative meaning, the symbol would become an instrument in the employ of the total organism rather than constitute the would-be substitutive trend it now represents. Were this organic discrimination preserved intact, the symbolic (cortical) system functioning phyletically would be as consistent in its world of appellative constellations comprising the relation of one individual to another as in the externally constellated world of sun, moon and stars. In the absence of affect or of this intermixture of function two astronomers might speak together as objectively of the factors determining their subjective interrelationship as they habitually speak together of the relationship of one star to another. In either case there would be the commensurate discharge of organic tensions as well as their economy because of the automatic consistency in the unbiased use of the word, symbol or indicator consensually adopted by such co-workers and mutually controlled by the extrinsic constant common to them as a species.

To recapitulate, the behavior of the cortical system is so far governed by the total-action pattern of the organism that in the absence of affect the symbolic processes of man are consistent in function throughout the phylum in their homogenic, socially systematized expression. But this assumption of a balanced coordination between partitive or symbolic and total organic functions is merely theoretical. It is to presuppose the abrogation by man of his partitive, affective systematization—a systematization that now colors the entire field of his subjective evaluations. Such an assumption represents what would have been for man the ideal situation in the course of his invention of sign, language or code. In point of fact, however, coincident with man's acquisition of his facility in dealing appellatively with the objective world—coincident with man's substitution of signs or appearances of objects in place of the objects themselves—his feelings inadvertently acquired for him also the substitutive, symbolic value of the projected sign or appearance.[22] What, then, do we actually find in the situation in which man is now symbolically conditioned inter-cortically or *inter se?* We find that by

[22] Cf. pages 122–123, 289.

virtue of this phyletic interrelationship all human beings condition and, in turn, are conditioned by one another homogenically or symbolically. We find that language as a growing process or the organism's miniature ambit of behavior has been more and more substituted for the actuality of man's adaptation to man, and that in consequence there has occurred a concomitant alteration phylogenetically in man's basic and intrinsic feeling. The result throughout the race has been a transposition of feelings into those signs or affect-surrogates of feelings that have taken the place of the actuality of feelings themselves. In other words, just as the feeling and behavior of man in their primary, orthogenically integrated aspect are phyletic, so in their homogenically constellated, social aspects the thinking and conduct of man are phyletic. As this conditioned aspect of man interrelationally is phyletic, it is not to be easily understood or lightly handled through the mere homogenic (psychic) observation of this or that particular individual in his particular deviation from the prevailing psychic, homogenic norm of adaptation.

And so in connection with this development of the symbolic system with its concomitant development of a symptomatology of behavior-disorders inter-individually or socially, we have need to consider not only man's relation to the external world but more particularly man's relation to man. Just as an individual in his symbolic function can form a mere image of a book or a bird, he can also form a mere image of another individual; and in either instance he may do so without violating organic consistency. But when one man, seeing another man merely as a projected image, arbitrarily assigns feeling, sensation or empathy to this projected *image*—a feeling, sensation or empathy that resides in and is experienced only internal to his own organism—we have, as has been repeatedly indicated, an unwarranted and quite spurious intermixture of elements belonging to the organism's total bionomic system of adaptation with elements belonging to the system of adaptation that is merely symbolically, psychically constellated.[28] It is inevitable that in this situation there should result only the punctate, focal affect, only partitiveness and a conflict in man's behavior, individual and social.

[28] See note 11, page 53.

And when every individual throughout society is in his daily activities everywhere investing his images of others with affect, and where this affective inter-activity within the community comes to be socially systematized as is the case to-day, we have within ourselves a conflict between the secondary partitive system and the primary total system that extends throughout the phylum. It is because this conflict is phyletic and the behavior of man becomes a problem in phylopathology that neurosis and crime, war, social discord and competitiveness take on an altered significance.

We have just seen that one individual may symbolically condition another and be symbolically conditioned by him. We have also seen that this conditioning process takes place throughout the phylum, but that at the same time the phylum maintains always the functional sovereignty of its processes as a totally integrated organism. But when the symbolic processes of all individuals of the species conspire to make an image of an individual take the place of his integral reality as an organism, when these processes conspire to substitute mere pictures of thoughts and feelings for primary thoughts and feelings themselves; and when this overt substitution of a secondary for a primary process takes place systematically throughout the phylum, we have not only the pseudo-invasion of a primary function by a secondary one, but there occurs overtly the encroachment throughout the phylum of a secondary, subordinate process upon a process that is organically sovereign and integrative.

It is this unsuspected trend in the affairs of the organism as a whole that marks the incidence of a conflict or neurosis that is universal. The conflict is not one within an isolated individual nor is it a sporadic upheaval within some isolated political or geographic community. There is a definite neurosis or disorder affecting the phylum of man throughout. Because of the neurological alterations concomitant to this conflict or neurosis—alterations which mark an imbalance of function between man's partitive and total systems—there is a tendency to crowd and to obstruct with awkward hindrance and embarrassment the organism's primary integrative principle of activation in respect to its outward manifestations. This integrative process constitutes pre-

cisely the organism's *prima materia,* binding the elements of the race into a common unitary whole. But there is overtly substituted for this primary principle of the organism's activation a pseudo first principle or *prima materia* that is affective, partitive and separative and that causes a division or neurosis within the organism of man that is neuro-social and phyletic.

This overt substitution of the partitive, homogenic system for the total, orthogenic system, although it exists phyletically, is, after all, only an *as if* phenomenon. No alteration has taken place within the biologically irreversible *as is* processes of the organism. No essential, no intrinsically permanent change has been introduced. The student may be assisted in sensing the purely transient, ephemeral nature of this functional replacement by recalling certain analogies occurring within the organism's more or less local or definitive systems. It is a familiar fact that under certain abnormal conditions, such as the introduction of a toxic substance into the alimentary tract, a reversal of peristalsis takes place causing retching and even vomiting. As we know, too, reversed peristalsis may be induced experimentally through the application of common salt to the peritoneal covering of the intestines when exposed by laparotomy. But this does not mean that reversed peristalsis has replaced the normal function of intestinal peristalsis which normally is, of course, from above downward. It does not mean that the organism's primary process of peristalsis, so essential to its function of elimination and to the organism's health, has been fundamentally replaced by this accidental incidence of a momentarily induced movement of the intestine in an opposite direction. It is a purely pseudo reversal of function or motivation. In like manner, with the induction socially of the reversed direction of function that characterizes man's image- or symbol-conditioned patterns of behavior, the oppositely induced motivation from periphery to centre does not alter fundamentally the organism's primary and central principle of activation.

As regards the superficial and adventive reversal of function that affects the processes of man, we need not go far afield for evidence that the neurosis is phyletic. The circumstance that man as a phylum has come to accept his partitive, mental system of

reactions as the sole criterion of human behavior forces him to place an unwarranted premium generally upon his psychic, extra-organic behavior and to interpret all human interchange in the light of partitive affects with their accompanying divisive "beliefs." It is not alone in his so-called conscious activities that man is partitive; man is compelled to deal partitively, symbolically or psychically with the entire phenomenal world of actuality. For whatever he touches he converts into symbol or semblance. Having not yet developed an eye for organically integrative phenomena as phyletically constituted, having lost touch with primary phyletic feeling, man can only substitute, instead, endless systematized social images, or that curious partitive, divisive mixture of symbols, words and bodily excitement that constitutes his affect. These homogenic index-reactions falsely color and distort man's natural behavior as they discolor and distort his outlook upon his disordered behavior-processes. But the evidence of the unbalanced distribution of tensions internal to man's organism as reflected in his outer confusion and conflict may be seen in all human activity, provided one maintains a basis of observation that is as phyletic as the phyletic material to be observed.

I have already indicated how man in his natural zeal for the conservation of the species mistakenly sets up an *image* of his survival in substitution for those primary instincts—mating, parenthood, his social and nutritional drives—that actually preserve the life and growth of the organism as a phyletic whole.[24] As these primary processes are organically phyletic, our observations of the single organism can very easily be misleading. For total processes that are internal and integral to the species are not to be reckoned with on the basis of a study of the individual alone. Homogenic reactions as demonstrated in individuals and as now systematized socially are but a vicarious and overt expression of these total phyletic processes, and the behavior of the individual in this homogenic setting no more embodies a satisfactory opportunity for the study of total phyletic processes than the partitive patterns of the single organism embody in themselves an opportunity for the satisfactory study of *its* primary integrative processes. We need to take into consideration the

[24] Cf. pages 347–348.

circumstance that such psychic processes as are represented in man's index-affectivities, as also in his efforts to repress them, are partitive processes and that partitive processes, being transient and significatory, are not biologically transmissible from generation to generation. They represent, as I have said, a mere tabular accumulation or accretion that ceases with the life of the individual. We need in addition to take into account that these partitive processes, positive or negative, for or against, active or repressed, have become socially systematized and that they are now, throughout the phylum, unduly presuming upon the organism's total function, inadvertently attempting to supersede with their restricted, secondary functions the functions of the organism as a primary integrative process. In this reckoning we shall be able to acquire not only an idea of the intricacy of the behavior-processes of civilization, but also a realization that the manifestations of this conflict or neurosis internal to the organism are phyletic and that they are to be seen in the daily activities of all human beings throughout the world of man. To assist in this realization it is important to emphasize again and again that the condition is not individual, nor even social but that it is phyletic; that it is not a question of one process or the other, of one system or the other, of this individual as opposed to that, or of one nation as opposed to another. It is a question of man as a phylum, and if our observations of man are to be comprehensive and intelligent, they must rest upon a basis that permits us to deal with man as a phylum.

One could, but one need not, recount the endless instances of paradoxical human behavior that are symptomatic of a neurosis throughout the life of man as a race. If it is man as a race or phylum who is divided against himself, then it is man and no "other" man who must look to the cause of this division. It is man, physiologically and phyletically integrated, who must recognize this conflict, whether expressed in neurosis, crime or war, as an imbalance of function within his own processes.

The situation is unquestionably serious. Man has been neurotically or disparately conditioning himself for ages. He has been reflexly conditioning himself inter-individually ever since the invention of language or the induction of the partitive sys-

tem of inter-cortical communication. Through his accidental over-appraisement of this partitive process of behavior, he has set up a pseudo-total pattern of behavior that is in actuality only secondary and peripheral and that cannot carry those organic processes of man-to-man relation that are phyletic. Through countless years he has so inured himself as a race or phylum to this make-believe *prima materia* of living that he is now, as a phylum, inevitably neurotic. But this situation, however serious, is not deplorable in any "normal," self-pitying sense, not any more than an epidemic of yellow fever or the one-time universality of the belief that the earth was flat. To deplore the biological accidents of our development as a species is itself but one of the many neurotic behavioral repercussions within the regressive trends of the partitive system of thinking. So, too, the civilized tendency to sentimentalize our situation is a mere partitive alternative to the tendency to deplore. But, in any event, division, conflict, neurosis, crime and war cannot prevail. Total function still goes on and, in spite of the pseudo-authority of the systematized social image, it is still primary and still sovereign. It may not come to the surface as it would were the partitive system in balanced relation with the total system, but when it does, as is the case, for instance, in certain musical or poetical phrases, it not only catches the eye and ear of man but touches his very physiology as a whole.

For, however confused man's thinking may be, the intrinsic, total system is always sovereign and always phyletic. It may be lost sight of but never repressed. Its cotentive processes may be embarrassed and even deflected, but the nature of its organic texture and the course of its quickening processes cannot be altered. The matrix of life is universal; it is larger than the individual, more encompassing than groups or nations of individuals. Man may momentarily halt its process of expansion from the whole to the part through his partitive invasion of this primary sphere, but he can destroy only the partitive system. He cannot reach partitively or mar the phyletic springs of life itself. He can only deprive himself of his thinking processes. Man can continue to beget children on the basis of social-image contact and fill the world with neurotic offspring; he may destroy what he

"thinks" is himself, but he cannot destroy life. He may, perhaps, even destroy civilization—a product of the socially systematized partitive system—but, when he will have finished, the primary totality of life, always phyletic and universal in principle, will spring up anew to assert the solidarity of man as a phylum.[25]

[25] Says Carrel (Carrel, Alexis, *Man the Unknown*, New York and London, Harper & Brothers, 1935, p. 10): "We must realize clearly that the science of man is the most difficult of all sciences." But is it? When we consider the extent to which man's problem is self-made, when we consider that an ineptness of function within himself has created the discord and complexity of which we are to-day the intimate witness, are we warranted in believing that man—the native organism of man—necessarily presents a behavior-problem of so great difficulty? When man is ready—and the signs along the social horizon give indication of a trend toward this readiness—may it not be seen that nothing presents less of a problem than the adjustment of man's organism to its environment? May it not be seen that were man functioning simply and as a whole there would not be the endless social, industrial, political, economic and *hygienic* problems that now occupy him? May we not see that all these problems are mere epiphenomena, mere external effluvia resultant upon an internal disturbance in the primary life and functioning of the human organism as a whole?

CHAPTER XIV

THE BEHAVIOR OF MAN AND ITS WIDENING FOUNDATIONS

A Summary

IN the bionomic investigation to which I have applied the term phylobiology my associates and I have necessarily been limited in our inception of an investigative procedure that has to do with the internal processes of man as a race. But obviously our difficulties have been by no means confined to the processes of ourselves as investigators and to our necessarily limited capacity of observation in so unaccustomed a field. The method of phylopathology introduced by us in our efforts to uncover the exteroceptive complex of impressions now assembled under the term "I" or "I, myself" has inevitably met with general community resistance. For investigation shows that this phyletically prevalent partition or dissociation among the elements of the species rests upon a socially erroneous principle of individual identity. It shows that this extra-organic substantive which rests upon a purely homogenic basis of identity is the expression of a common racial fallacy existing throughout the human organism. While the cortical, exteroceptive mechanism that characterizes the symbolic substantive "I" and its inter-individual relations is adapted to the selective, itemized *pictures* of the surrounding world of objects, it is utterly without a basis of balance and orientation when it assumes overt supremacy, as it does, over the complex of inter-physiological tensions and reactions that constitutes the stereognostic mass-identity of the total organism. Thus the uni-dimensional and projective identity introduced by man's system of symbols as sponsored by the social substantive "I" represents but an organically restricted pseudo-

identity that is racial, and the difficulty of my associates and myself as investigators in our approach to this racial problem is but an infinitesimal element in a problem that belongs to the organism of man as a community.

In the laboratories of animal experimentation, as we know, stimuli are set up which artificially condition given reactions through the frequent repetition concurrently of such stimuli with stimuli which produce these reactions naturally or in the absence of conditioning.[1] Similarly, through the quite accidental processes coincident with man's development as a species or phylum, there were produced within the organism of man certain conditioned responses, and these responses, like those artificially incited in the laboratory, were initially introduced through the operation simultaneously of the artificial stimulus with the stimulus which originally called forth the physiological response.[2] Such phyletically conditioned reflexes, as they have come down to us to-day, are represented in our responses to the signs, words or symbols originally produced in us concurrently with the appearance or presentation of the objects in question. Gradually as the object was withdrawn the word, sign or symbol came more and more to replace the stimulus which was first produced by the object itself. This domain of racially conditioned, homogenic reflexes became gradually highly systematized and segregated from the system of responses that belongs to the organism as a total, orthogenic reaction.

Observations in phylopathology give evidence that the marked confusion in man's processes of adaptation to the external world of reality links up with the biological circumstance that over a certain period in man's evolution the processes which had hitherto occupied the total organism in response to external stimuli came, *in effect*—that is, overtly—to be gradually lifted up into a special zone whose function and facility it was to translate or dramatize the *actual* object into a convenient sign, signal or symbol *suggestive* of the object.[3] With man's development there was developed simultaneously this special symbolic or mimetic (lin-

[1] Cf. pages 276–277, 298–300.
[2] Cf. page 305.
[3] Cf. pages 235, 297–298.

guistic) function and its relation as a partial reaction to the organism as a whole. With this advance in man's evolution there occurred also the ever increasing specialization and segregation functionally of this picture- or sign-producing segment with its inevitable entail of affect-residua inadvertently carried over from the organism's system of total empathic reactions.

It becomes the function of science—the function of an approach to an understanding of human processes that rests upon controlled objective inquiry—to give form and definition to this system of reflexes and responses thus established as a separate part-function of the total organism. That the scientist, in studying objectively this field of man's subjective processes, is at the same time a subjective and continuous part of the material under investigation does not absolve him from applying to these processes, internal and habitual to himself, the same rigid criteria of observation and study which he has learned to apply to material lying outside of himself. He is under obligation to apply to the sensations and reactions native to himself and his fellows the same objective and consensual tests that he customarily brings to the observation of processes which lie outside this domain of his own internal sensations. Careful laboratory inquiry in the field of phylopathology furnishes evidence that the system of responses constitutive of the collective impressions and reactions that make up the organism's sign- or word-conditioned reflexes is nothing other than the social substantive which each of us now employs subjectively in the systematized symbol-complex each of us knows as "I."[4] With this partitively, symbolically systematized hook-up of recent biological acquisition through which the processes of the individuals of the species are connected inter-individually, inter-cortically, in their common symbolic interpretation of the outlying universe, it was inevitable that man's empathic reactions should have been reflexly touched off partially or partitively at the same time that there occurs the symbolization of the object. That is, with the naming of the object it was inevitable that the organism's feeling-response should have been simultaneously touched off also.

It is to be expected, then, that the system of word-conditioned

[4] See note 24, page 130.

reflexes now organized within each of us as the social substantive "I" should also embody a system of word-conditioned sensations and affects which are equally systematized but are necessarily accidental and arbitrary. Due to this systematization of arbitrarily conditioned feelings and sensations it will be understood that the social substantive "I" is exceedingly wayward, extravagant and even phantastic in its private assumptions and premises, and that in consequence we should find it subjectively exceedingly chary of all attempts at an objective inquiry into its now privately constellated system of impressions. In the experimental work of my associates and myself with the reactions of the organism as a totality, our special interest has centred upon the effort to reëstablish the primary feeling-basis of the total organism by confining to the symbolic segment the function appropriate to the symbol—the function, namely, of cognition or of recognition—and restoring to the interoceptive system those feelings and sensations originally pertaining exclusively to this natively empathic zone.[5] In other words, our observations of the organism in its general bionomic adaptation give evidence of the need of a total re-centring of the organism's affective or part-feeling processes. It is our observation that processes which, in effect, have been reflexly lifted out of their original setting and transferred to the cortex and its exteroceptive channels of response, require now to be re-routed into their primary empathic paths of reaction.

In our study of group behavior and its subjective, homogenic determinants no one element in the extensive range of man's behavior-symptomatology was found to stand out so clearly or to represent a more significant factor in the general disorders of the individual and of communities than the circumstance that each such unit, whether an individual or a socially identified group of individuals, invariably assumes psychically, extra-organically, a premise of behavior which automatically precludes the possibility of a unitary and consistent basis of action. It became apparent that, far from functioning upon a unitary and consistent basis of action, the human organism is under compulsion at all times to attempt to reconcile two courses of conduct that are

[5] Cf. pages 333–334.

mutually exclusive and contradictory of one another. It is under compulsion to operate at one and the same time and along an identical path in both an outgoing and an ingoing direction, and to do so with equal validity whether the process be efferent or afferent, whether it be away from or toward the subject or unit in question. Operating under such a dichotomous license the arbitrary unit—whether "I" or "we"—is at liberty to interpret an identical motive, trend or action in a totally opposite manner according as it arises in and flows from the subject toward the individual opposite him or as the flow of the trend is in a reverse direction, that is, from the individual opposite toward the subject. For this reason one may always justify himself in acting toward another person in a way that he would not feel the other person justified in acting toward him. That is, the same impulse becomes differently evaluated in its *content* according as it is efferent or afferent in respect to the subject. And as with individuals, so with units or nations of individuals. We are all familiar with instances in which a particular person or unit will in a given situation unquestionably repudiate such and such a course or policy on the part of others as being unsuitable, yet the same person or unit given an identical situation will himself adopt this same policy or measure as most appropriately befitting his own private purposes.[6] *I* may say that *you* are a scoundrel and I shall be perfectly right in *my* opinion, "my opinion" representing in my dichotomous activation a criterion that is standard and unimpeachable. But *you* (though biologically and socially no less authentic in the systematization of this "I" than myself) may on no account say that *I* am a scoundrel, because you, not being I but a person standing opposite this "I," are, in my always right opinion, necessarily wrong. I being the homogenically systematized substantive "I," *your* opinion can only represent in *my* opinion a wholly spurious criterion of judgment. This unfailing inconsistency whereby the subject is always

[6] To indicate our own inconsistency toward policies of imperial expansion on the part of other nations—as shown at the moment, for example, by Italy toward Ethiopia—various writers have cited the unfair treatment of the Indians on the part of America in *her* zeal for conquest. See Weinberg, Albert K., *Manifest Destiny: A Study of Nationalist Expansionism in American History,* Baltimore, Johns Hopkins Press, 1935, pp. 283–323.

"right" and his vis-à-vis always "wrong" is precisely the prerogative of the "I"; and as the community is but a multiplication of such speciously self-arrogating "I's," is it any wonder that there exists the social miscarriage of interest, feeling and judgment that characterizes individuals and nations on every hand? [7]

And yet to know all this is meaningless and unprofitable as far as affects the practical problem of gaining access to this socially prevalent disorder in the feeling-life of man. Man's clearest mental insight or his deepest philosophy is here utterly ineffectual. These we have had for countless generations. Insight and philosophy again have to do only with the signs, words and symbols that are in turn the habitual tools of the symbolically systematized "I." These signs and signals are not in themselves the legitimate materials of medicine or biology. Though expressions of the organism's extrinsic constant, they are only indicators that point the way to the proper employment of these sciences. The inconsistencies that characterize the behavior of man, all his emotional instability and insecurity, are but the expression of transient signs, symbols and indices, and as such reflect a purely superficial standard of conduct. These external signs and images with which we symbolize conduct have to do only with what is "good" or "bad," favorable or unfavorable to me as subject possessing indisputable authority in this partitive field of man's behavioral equities. But the favorable and the unfavorable are but the "like" as opposed to the "unlike" conditioning stimulus as it affects man socially in his extra-organic, psychic or index domain of reactions. They are the semiotic illusion of right and wrong—the projicient dichotomy upon which the basis of human conduct now phantastically reposes. Such a basis is not intra-organic. It does not represent the intrinsic actuation of man's

[7] Nowhere perhaps is there to be seen a more outstanding instance of this subjective fallacy than in the self-righteous arrogations contained in Kipling's poem, "If." The pusillanimous magnanimity of the homogenic and inverted "I"-system is proclaimed in every line. For example, take this gem, though the italics, of course, are not authentic:

"If *you* can keep your head when all about you
Are losing theirs and blaming it on *you;*
If *you* can trust yourself when all men doubt you,
But make allowance for their doubting too: . . ."

and so on throughout the poem, piling up, line after line, image-comfort on image-comfort.

conduct as a species.[8] It posits a partial, homogenic, mutable basis of motivation that is organically superficial and spurious in place of the objective, orthogenic, permanent principle that embodies the basic, central motivation of man's organism as a phyletically total pattern of reaction.

The mental problems of man are without exception the problems of man's own mental making. These problems, therefore, will not find a solution in mental or cortical remedies. The organism's psychic, cortical involvement in man's inadequacy of adjustment is but a part and a very superficial part of the real problem. Its solution will not be found until the organism as a whole is permitted to participate in this broad bio-physical problem in the precise degree in which the organism has come to share in the disordered human relations that are the outer reflections of this internal disharmony.

The proprioceptive problems of man will not be adjusted through tariff revision, "higher brackets," child guidance clinics or Geneva parleys. Man's problem is an internal, anatomical one having to do with the organism of man in its phyletic totality. No matter how much objective information the organism may gather to itself cortically, lineally or in its projicient (symbolic) relation to the objective environment, the subjective, proprioactive organism preserves its internal balance by means of its concrete space-relations to the environment as a whole. So that in its solid or total mass-dimensions the solid total-dimensional organism relates itself to the outer objective world of total solidity precisely as it relates itself subjectively to the individuals and communities which are internally continuous with it as a species. It is through the organism's attempt to maintain its lineal, projicient or cortical mechanism of observation toward its own solid total-dimensional species that the organism's subjective space-relations have broken down and become confused in their full- or four-dimensional totality.[9]

Man endures the disorders that everywhere afflict his life be-

[8] Cf. page 282.

[9] I cannot help wondering whether, after all, the dynamic abstraction known to the mathematical physicists as the fourth dimension is not precisely their symbolic projection of the organism's dynamic behavior in its total-dimensional function.

cause he has so far lost touch with the organism's primary principle of sensation as a total pattern that the pain which registers his discord and pathology is not now experienced by him where the pain and pathology actually reside. Man interprets his pain as a localized and superficial sensation. He senses it as a merely partitive, circumscribed or individual condition having its centre, its focal seat, in the psychically segregated segment or system universally conditioned as "I." But it is not "I" that hurts. It is not the restricted persona symbolized as "I" that registers pain. That is merely what the "I" thinks about it, and such "thinking" represents but the preceptive judgment that emanates from an already partitively conditioned ambit of "feeling." Man will not find the clue to his bionomic disorders of adjustment in this extra-organic anomaly of himself as this "self" is reflected to him in the mere picture or symbol of his total phyletic organism.

Primarily the pain about which this homogenic "I" complains pertains to the irreconcilable segmentation individually, symbolically, of the organism as a whole. It pertains to the organism as a pseudo, individually dramatized or partitive function that has become differentiated from the phylum through the special claims of the social substantive "I" with its affect-prerogative restricted within the organism's symbolic, homogenic segment. When man will have fully recovered a sense of his organism as a whole, he will not have recourse in his complaint to the symbolic picture of himself he now unflatteringly calls "God." No longer appealing to this inert image of himself for the succor that resides alone in the total function of his own organism as a racially continuous process, man will recognize his many popular but false images of himself to be but partitive preoccupations secondarily projected in substitution for the organic reality of his own internal integrity.

It is the natural function of pain to direct the organism's attention to the disease or disorder that occasions the pain. The organism normally turns to the seat of the disorder to which the pain unfailingly refers it. In a word, the attention goes naturally to the part or organ that requires being attended to. This is a wholesome and biologically fitting process of reference. So

that, where man's cotentive processes are intact, as was the case with the organism before the inculcating of symbolic, axial lines of reference, such pain as was coincident with the travail of man's life as a total organism—the ordeals of hunger and cold, and other hardships incident to survival—was experienced cotentively, and the occasion of the pain was sensed within the organism in its totally integrated function. But with the introduction within man's life of social or mental innovations in adaptation and with his constant emphasis upon the habitual avenues of the symbol and its projicient axis of reference even such reactions as the pain of man's struggle for survival came also to be falsely projected and referred. In this inadvertence of reference there came about the constant looking to some one else, the constant reference and complaint, or the seeking of aid through the dependence of individuals homogenically one upon another.

It was to compensate the loss of the reality that resides alone in man's own internal integrity of function that man created the *image* "God" and established social reference to it as the universal catch-all for the referred pain he experienced as a phylum. But it would seem that man is now becoming geographically too closely knit and interrelated as a phylum, at least peripherally, to be able any longer to refer so satisfactorily to the imaginal Immanence fancifully projected by him as existing outside himself. Without his full awareness of it this fanciful Outsider or Other Self is gradually becoming absorbed into, and thus rendered an integral part of, man's own internal processes as a coordinated race. Man cannot now so satisfactorily refer his pain because with his growing awareness there is now nowhere any "other" to whom it may be referred. I mean by this that nations, like individuals, are already becoming more conscious peripherally *as a phylum;* that peoples are growing more conscious, however homogenically, of their continuity as a species. This circumstance of the contraction of man's subjective world, the world of his interrelational perspectives, is, no doubt, contributed to in large measure by the inevitable geographical contraction that has taken place among us through the increasing facilities of contact and communication between individuals as between na-

tions.[10] For with his modern inventions man has shortened immeasurably the intervals of space and time, and concomitantly his habitual lanes of reference and projection have automatically become further narrowed and confined. In the absence, however, of their organic assimilation internally the resultant progressive activity of man's ambit of conventional, partitive affects can temporarily only multiply and increase both inter-individual and international friction.

As a species, therefore, it must become increasingly our tendency to return to those cotentive processes that were originally the organism's inherent mainstay. Instead of referring our pain as an individual to some other individual, or as a nation to some other nation, or as a world of social communities to a fanciful Immanence presiding beneficently over these communities of social man, it will be necessary to sense intra-individually or within the actual tissues and processes of the organism itself the organism's need as a phylum. Undoubtedly it is the absence of some such integrative process that accounts for the discord and confusion that now oppress the race of man on every hand. There are undoubtedly the social signs that a new adaptation to the environment as well as a new adjustment within the organism itself is in process of formation. But this new adjustment needs to be quickened into activity. For man, long misled in his feeling-life by the projective habits of his mental adaptation, is now almost wholly unfamiliar with the internal processes closest to him as a race or phylum.[11]

The mechanism by which man projects an image of his fundamental integrity as an external recourse on which he may rely in substitution for the authority of his own inner processes may present itself under many images and guises. It is not the orthography, so to speak, of the word or symbol that constitutes the guise. One may spell it as he will. He may call it Truth, *élan vital,* "the realization of the self," the "cosmic essence,"

[10] Burrow, Trigant, "An Ethnic Aspect of Consciousness," *The Sociological Review,* 1927, Vol. XIX, pp. 69–76.

[11] One recalls Scheler's idea that there are indications in the present development of culture of far-going reorientations in man's biological economy.

Scheler, Max, *Philosophische Weltanschauung,* Bonn, Verlag von Friedrich Cohen, 1929, pp. 61–63.

the "astral principle," or God. Many indeed are the homogenic aspects under which the unfulfilled need of man's generic organism may take shape. In the absence of the concrete, objective observation by man of his own processes under experimental laboratory conditions it is not by any means excluded that this arbitrary surrogate should even disport itself under the name of "the organism as a whole"—a tendency that is, in fact, rapidly coming into fashion within psychiatric and psychological circles. The reader would be surprised to know how many otherwise intelligent people there are for whom the mood projected socially in the image of God finds its expression in precisely such appellative, homogenic surrogates. Indeed we do not at all suspect how constantly the lesser homogenic ambit or the reflexly conditioned reaction-mergent tends to supersede the basic authority of the organism as a whole with fanciful effigies of the organism's function as a totality.

On the other hand in certain fields of investigation it would seem that extra-organic, affectively colored notions, are everywhere being more and more replaced with sober bio-physical concepts. Just as the preceptive ideas of the astrologer, the alchemist, the faith-healer and the magician have given way to the scientific methods prevailing in the laboratories of astronomy, chemistry, medicine and biology, so our partitive ideology of God is apparently giving way to a biology of the organism's total behavior. Such metaphysical epiphenomena as "right and wrong," gain and loss, you versus me, must also give way to a principle of unity and integration in human affairs that will weld the social activities of man into a unitary and coördinated whole. But this reorientation entails the fearless repudiation of our dualistic alternatives of self-advantage now fancifully projected outside the organism as good and bad, and the replacement of such vicarious standards by an integrated pattern of behavior that will regulate itself in accordance with the intrinsic central constant of the total internal organism of man as a race.[12]

Could it be that the behavior-disorders expressed in insanity, crime and in social dissension—disorders which have increased in so great measure among us in recent years—are to be ex-

[12] Cf. page 317.

plained in part by man's having attempted prematurely to throw over his image of God? May it be that man now tends to forfeit his sense of an extrinsic right and duty before he has established within his own organism the integral principle for which these images of unity and integrity stand—images which, however vicariously, have served him in such good stead during the less cultural stages of his evolution? It is obvious that one could not with impunity withdraw from a child the less adequate, if artificial, incentives to ordered conduct before the more adequate, more basic motivations fundamental to him have been permitted to come into their natural expression. So with man as a phylum. As we look back upon the childhood of the race from which we have descended and from which we are only now beginning to emerge, it would appear that a process similar to this has occurred among us racially. It would appear that man has loosed his hold upon earlier, superficial, less cultural standards of behavior before having established within himself the solid-dimensional basis of motivation and behavior integral to his organism as a species.[13]

It is interesting that the very criterion which by universal agreement constitutes the test of an individual's sanity, namely, his capacity to discriminate between right and wrong, constitutes in fact the precise index of his imbalance or insanity. If, according to normal and legal criteria, an individual can discriminate between right and wrong, he is adjudged sane. But in the light

[13] In response to the organism's deeper empathic constant of motivation, poets in their more highly sensitized organization (though they are really no less partitively, extrinsically adapted than the rest of us) not infrequently employ the homogenic symbol to give expression to a truly intra-organic principle of motivation in man's behavior. But the biological significance of this principle, however neatly turned may be his expression of it, the poet himself does not, of course, even dimly suspect. Says Swinburne, for example, in his poem "Hertha":

> "I that saw where ye trod
> The dim paths of the night
> Set the shadow called God
> In your skies to give light;
> But the morning of manhood is risen, and the
> shadowless soul is in sight."

So let not the unwary reader in his own extrinsic index-conditioning fall a too ready prey to such purely extra-organic, effluvial surrogates as may prompt and color our ever handy verbal images. While science and poetry have frequently wedded, their nuptials have represented as yet but a homogenic miscegenation; they have not embodied an intrinsic, orthogenic union.

of the organism's behavior as a whole such a capacity of discrimination in projicient, semiopathic values betokens an imbalance in the organism's total behavior-motivation. An organism, whether individual or community, that has become so conditioned that it habitually employs vicariously a partial segment of itself in place of its total basis of orientation is an organism which in the finding of phylopathology shows an imbalance in feeling and in judgment in respect to human values and relations. From the altered, intra-organic frame of reference of phylobiology, the "normal" test of an individual's sanity constitutes precisely the test of his insanity. History provides abundant analogies of this projicient, dichotomous, moralistic mechanism. It used to be that the intelligence test *par excellence* of an individual was his capacity to discriminate between good omens and bad, between those signs which presaged good luck and those which augured ill, between the promises of good fortune and the premonitions of an unfriendly fate. In short, the personality which in primitive communities was most outstanding for his intellectual acumen was the fortune-teller, the soothsayer, the magician or the chiromancer. Even in later days we read that the special prowess of St. Augustine was his capacity to differentiate between divine and demoniacal inspiration. To-day this magic power of discrimination has been transferred to the mythical antagonists represented in the image-conditioned reactions called "right" and "wrong,"" and according to "normal" sanctions the individual who is "sanest" is he who is best equipped to define the fanciful distinction between these two symbolic alternatives. But, in truth, the personality that is really sane, whose sanity is represented in the organic balance of total internal orientation, is the individual who recognizes that this moral dichotomy is purely mythical, that it is as mythical in its all-pervading authority over man's social processes to-day as was the mythical distinction presaged in the good or bad omens that dominated the behavior-reactions of more primitive periods. As I have said, however, neither the individual nor the community can, or indeed should, forgo this artificial, semiotic basis for adjusting the organism's internal behavior to the external environment until man has replaced this superstitious criterion of conduct with a criterion

that is internal to the organism's processes as a whole. The organism must first have come to regulate its behavior in reference to a basic principle of motivation as contrasted with a basis of motivation that is superficial and spurious.

Under the discipline of phylobiological studies of human behavior and its inherent motivation the utter undependableness of our prevailing extrinsic standards of right and wrong as criteria for controlling and developing the conduct of individuals in human society becomes more and more apparent.[14] Though, in our original groups, years were required to establish this finding among us with a degree of social consistency requisite to a working hypothesis, the real problem—the practical problem of man's social subordination to word- or index-conditioned reflexes—lay before us still. There remained the actuality of the organism as a whole to be reinstated as a central principle of motivation. No hypothesis, no mental precept or intellectual theory, would avail in giving objective definition to processes over which our prevailing partial system of adaptation was already exerting socially an affect-influence. As long as such influences persisted in dominating us socially, they were not for a moment to be sensed empathically or dealt with objectively for what they were—the mere extrinsic, homogenic reflection of words, theories, precept and speculation. Concomitantly, however, with the relinquishment of those habitual processes of conduct which are dependent upon the affectively colored sign or symbol, or upon our customary interchange of "moral" ideas, there developed automatically within the organism of individual and group a facility for effecting a practical reabsorption socially of homogenic sensations and affects, and their gradual transposition into the primary internal reactions of the organism as a whole.

Like other animals, the individuals composing the race of man embody in their inter-individual processes an interwoven and continuous nexus of common patterns or mergents, and these phyletic mergents represent the substrate of feelings and sensations shared among them as a species. If the spurious symbolic channels into which we now find these common denominators of feeling and motivation to have been reflexly diverted are intercepted, the

[14] Cf. Chapter III.

organisms which had been hitherto cut off from their primary physiological channels of communication, one with the other, are found to revert quite automatically to those basic media of common behavior and function that once served the individuals of the species in their primary equipment as total physiological organisms. Here, then, was offered a new field of research—and a new principle of adaptation to the world of actuality. In this field it will be understood that our laboratory assignment consisted not in the bandying among us of concepts presumed to counteract concepts. It consisted rather in the task of recognizing and restoring the physiological interreactions of the organism as a phyletic whole in contradistinction to the physiological reactions resultant upon man's inter-individual, cortical adaptation to his fellows through the common misuse among them socially of the symbol.

Already I have said that the task of re-centring the organism's basic feeling-reaction as an indigenous bionomic process has not proved an easy one. If one were to think only of the age-long habituation of man to the partitive or symbolic mode of intercommunication and contact, such an undertaking would seem quite impossible of accomplishment. But, however wide-spread the condition may now have become socially, when we consider that each of us must be artificially taught in his infancy to adopt this symbolic, word-conditioned response to outer impressions, that our reaction is an extraneous condition artificially superimposed upon us, we find ourselves, as individuals, faced with a problem of readjustment that is clear, direct and definitive.[15] For this problem, dealing as it does with habitual behavior-processes, becomes essentially a problem in internal orthopedics. It is true that processes so delicate and impalpable as those involving man's internal behavior are not easy of recognition and adjustment. This adjustment involves the relationship between man's total cotentive and his partial attentive functions of adaptation. In this adjustment, therefore, we are dealing with processes that bear upon those internal tensions and strains which represent externally, psychologically, phenomena of "mental" projection but which represent internally, physiologically, the organism's

[15] Cf. pages 333–334.

partial tensional patterns and their relation to those basic tensional patterns that govern its adaptation as a whole.

As often happens in the field of biological inquiry the investigator is greatly assisted in his experimentation by stimulating mechanisms which are innate to and which normally characterize the material investigated. In the field of animal physiology it is well established that even where a very minor element in a complex of reactions has been stimulated, the stimulation may extend to and reverberate throughout an entire plexus of related tissues and organs.[16] For example, a slight stimulus to the cornea will induce the reflex of blinking, but a sufficiently strong stimulus to this part, or one repeated sufficiently often, will cause reflex reactions of the head and even of the entire body. In a similar way a symbol or a word-conditioning stimulus produces primarily only a reflex image of the object symbolized. In this mere image-response the reflex arc has been completed. Such is the case where the individual, let us say, sees a tree. In the primary organism of cotentive man the effect of this stimulus is, of course, increased if the image involves the reaction of the organism as a whole. Say the image is that of a falling tree, of a tree that is splintered by lightning, or that crashes to the ground by being caught in the path of a violent tornado. Here the image of the tree, plus the image of the tree falling on me, is accompanied by anticipatory sensations of menace to the organism as a totality, and the visual image, tree, being vastly augmented by the empathic elements that now accompany it, causes a proportionate increase in the organism's total pattern of response.

But where it is a question of semiotic, homogenic man and his infinitely conditioned associations with the self-picture he calls "I," with its social importance, its rights and titles, etc., the presumable objective symbol now becomes a subjective affect-symbol.[17] Where affect thus attaches to the symbol—where the symbol has been strongly reënforced with conative elements—there is also aroused a proportionately increased response which may likewise extend to general body-reactions, as may be seen in the motor reactions that accompany the sensory responses ex-

[16] Cf. pages 267, 287.
[17] Cf. pages 130, 281.

perienced partitively as anger, fear, dependence, hatred etc. But this heightened and more general reaction of the "I" still remains within the homogenic system or persona. It is a reaction within the partial ambit and it in no way represents a response to the organism's primary motivation as a whole. Because of this commonly unrecognized restriction of the organism's behavior, *the problem of our behavior toward it is a distinct and unique one.* In actuality we are not in the situation in which we "think" we are. On the contrary, in accord with methods prevailing in the projective field of investigation, we tend to make observations upon the behavior-reactions of man as though these reactions were primary and intra-organic, when as a matter of fact these reactions, as I have just said, are the expression of secondary, homogenic or partial mergents to be found only within the domain of the partial or lesser ambit or within the organism's miniature segment of response.

As we approach the study of individuals and communities, then, from the standpoint of their sensory and motor incitements to behavior, our problem becomes one of internal adjustment within a continuous bio-physical situation. Setting aside the spurious entity experienced psychologically and designated socially as "I," with all the phantastic, sentimental, moral implications which cling to it, let us turn instead to the study of the organismic biology of man as a total pattern of reaction, and specifically to the study of the biological distortions within the processes of man's organism which are answerable for this social affect-phenomenon everywhere separately vaunted as "I." Let us, as far as possible, study this personality transposition outside the frame of the manifold systems of word-conditioned reflexes that are answerable for this transposition. Immediately we find ourselves upon the solid ground of anatomical and physiological objectivity. Straightway we are faced with internal tensions and alterations which, though they may not be as tangible as the alternating contractions and dilatations of the heart muscle, are at least as readily appreciable objectively as the modifications in internal tensions concomitant, for example, to the alternations of hunger and fulfillment that normally make up our daily nutritional cycle.

Turning again to the superficial structure of the "I"—to the system of images and ideas that forms the mental or social identity of each of us—we find the superstructure of the mental, extra-organic life of man to consist of a very special and private acquisition on the part of each individual. This intellectual acquisition has been in a sense the personal achievement of each individual, as has been the gradually wrought morphological understructure concomitant to these thought-processes with their slowly fashioned and intricate network of neural patterns and interconnections. For the system of neural paths or the functional connections that underlie the symbols or words with which we communicate with one another was only slowly and painstakingly acquired by each of us, as more and more the organism's word-conditioned responses or the individual's vocabulary, as we say, became enlarged in extent and complexity. In view, then, of what appears to him as his own personal part in building up the materials that constitute his own personal equipment intellectually, each of us is led to regard the domain of function represented in his mental life as his own private attainment or possession. Each of us, in his socially conditioned, homogenic mode of adaptation, is socially deceived into believing that he is *not* thus socially conditioned homogenically.

With the primary feeling-life of man, however, and with the elaborate patterns of neural, muscular, vascular and visceral interconnections that form the substrate of man's empathic sensations and reactions as a whole, the story is a very different one. Here there exists no such discrimination in individual selection—no private choice, no building up in each of us of the materials newly acquired and adopted according to the personal gift, opportunity or environment of the particular individual.[18] In the realm of the feelings and sensations of the organism as a whole, therefore, man finds himself on more democratic soil. For organically this domain is equally the heritage of us all. Whatever may be the expression of this organismic province it is the expression, of course, of a common racial endowment.

Investigations directed toward the attainment of a healthier

[18] Cf. page 263.

organization among us individually and socially, clearly point to the obligation of physicians and educators to inculcate principles of behavior in the individual which do not aim to conform to a basis of mere symbolic acquisition or accumulation but which aim toward an organic adaptation or toward an internal coördination that has to do with the behavior of the individual and of society as a functioning totality. To this end our first need would seem to be the internal recognition that the present subjective, "I"-motivated basis of man's behavior-adaptation is throughout fallacious. In order to bring this realization completely home to us it becomes obligatory that we adopt toward our own internal processes a basis of inquiry that rests upon definite objective data, and that accordingly we define in clear objective terms the physiological basis that underlies our various expressions of human behavior, both individually and as a phylum. We need to make clear to ourselves the essential difference between the physiological mechanism that mediates the partitive, symbolic mode of man's adaptation to the outer world and the mechanism that mediates the bionomic adaptation of the organism as a physiological totality. We need to differentiate between homogenic and orthogenic reactions, between the function of the partial and that of the total mergent, between the organism's lesser and its greater ambit.

We have seen that the structures involved in the organism's symbolic or "I"-constellated processes of interchange are very different from those which mediate the responses of the organism as a whole. Not only is there a difference in the location of the structures called into play in the two modes of response, but the response of the respective areas affected results from totally different types of stimuli.[19] This means that there are habitually taking place within the body two totally different patterns or forms of neural reaction, that there exist two quite distinct functional configurations within the body-processes depending upon the nature of the stimuli received from the outer world. In other words, just as the muscle of the heart presents a difference in function that shows two distinct patterns of reaction, the systolic and diastolic—depending upon whether the origin or

[19] Cf. pages 116, 280.

quality of the stimulus derives from the parasympathetic (pneumogastric) or the sympathetic nervous system—so the organism of man responds with an entirely different reaction-configuration or with a functionally different pattern-complex according as the stimulus received is registered in the symbolic, partitive segment, or as it reaches the organism as a whole in its immediate relation to the total object.

In the experiment of Pavlov in which two differentially conditioned reactions are produced in animals, all goes well as long as the two stimuli calling forth these reactions are kept distinct. We have seen, however, that in the human organism there is a constellated system of conditioned reflexes induced through sounds or words which have been presented simultaneously with the perception of the corresponding outer object or event. This verbal system of conditioned reflexes, which we now employ automatically as language and which as automatically employs us in its unrecognized tie-up with our affects, constitutes the mechanism of man's intellectual thought and speech.[20] This conditioned system of responses coexists along with responses induced in the organism in its total physiological expression. But like the differential distinction shown in the responses of Pavlov's experimental animals with the induction in them of the discrete conditioned reflexes described in earlier chapters, so with the conditioned reactions in man. As long as the two constellated systems of response automatically induced in man—the symbolic and the integral—are kept distinct from one another, the physiological mechanism appropriate to each remains completely adequate and intact.

There is to be noted, however, an exceedingly important difference where we are dealing with the discrete conditioned reflex in Pavlov's experiment and where we are attempting to deal with two separately constellated systems of reflexes existing within ourselves as they have arisen in the course of man's development as a phyletic organism. This difference involves a distinction between modes of reaction which constitute two distinct personality systems. The constellation of responses which are embodied in the organism's total reactions and which we

[20] Cf. pages 280–281.

have called the *organic persona* represents one system, while the complex of word-conditioned responses expressed in the *symbolic persona* represents the other. Due to the overwhelming predominance socially of the symbolic system of reflexes, the primary basis or centre of the organism's original identity or self-determination has been overtly transposed into this secondary, projective persona known socially to each of us as "I." For, as has been said, this symbolic persona has not remained distinct from the persona expressed in the organism as a whole, but has more and more encroached upon it until the symbolic persona has now overtly assumed a mock priority over the organism in its total basic identity.[21] This confusion involves a false and conflicting personality basis. It imposes upon the purely cortical system the burden of total feeling-responses to which this system is wholly unequal.

We have thus a partitive, symbolic, extra-organic identity or behavior-ambit existing side by side with a total, stereonomic, intra-organic identity or behavior-ambit. Though existing side by side and representing potentially two systems of incomparable advantage mutually to one another in the adaptation of civilized man to the growing complexities of his environment, these two parallel bionomic systems of reaction are in fact totally at variance with one another upon man's present level of development. Instead of complementing one another they constantly react to impede the natural fulfillment of the function of each. In short, these two differentially conditioned systems of reaction so clash and conflict in their undemarcated proximity one to another that within the organisms thus racially affected they have produced a racial neurosis.

The condition, then, experimentally produced by Pavlov is a relatively simple one compared with the actual organic process with which the human organism is now practically confronted in its daily activities. In Pavlov's experiments he brought into his laboratory healthy dogs, induced in them two differentially conditioned reflexes and, gradually approximating the two stimuli to a point at which the dogs could no longer discriminate between them, he produced an artificial neurosis in a hitherto healthy

[21] Cf. page 343.

animal. The status, however, with ourselves is wholly different organically. Through an accidental *faux pas* in man's development as a race, two *systems* of response, the one partial or conditioned, the other total or non-conditioned, came inadvertently to be approximated more and more to one another until man as a race or phylum has been rendered unable to distinguish between the two systems of reaction.

Of course, as components of the species man, we may in quite cavalier fashion look at intellectually and observe projectively the experimental results produced in the species dog, but as components of the species man we may not so nonchalantly look intellectually at and observe projectively our own phyletically conditioned reflexes. We may appreciate them only internally as phenomena that have occurred within our own organisms. Our problem is further complicated by the circumstance that we begin, as I have said, not as Pavlov did with healthy animals in which we may objectively produce an *experimental* condition of conflict that will result in the animals' confusion and neurosis. On the contrary, we are attempting to deal with a problem in which we ourselves—we who are dealing with it—are already subjectively involved. We are dealing with a definite problem in animal physiology under conditions in which the organisms under observation are already confused and in which the resultant conflict exists throughout the species as a whole. In contrast, therefore, to the problem of the animal experimenters, whose effort it has been to bring about an artificial approximation between two discrete conditioned reflexes, our problem is to separate two systems of reactions which already have become automatically approximated—that of man's organism as a totality on the one hand and that of his symbolic system of reflexes on the other.

The nature of this disparity in man's two systems of response may now be considered in its genetic setting. In the early stages of an infant's development, its acquirement of language or the induction of its word-conditioned reflexes takes place involuntarily. An object is presented to the child and the name or symbol of the object is sounded simultaneously with its appearance. Gradually the mere sound of the name suffices to identify the

object in his mind. Later the written word or the visual symbol becomes the conditioning factor in the act of recognition (index-reflex). With the acquirement of reading and writing, the child is now well along in the process of learning or in the acquirement of the complex constellation of words and word-systems that form the basis of his mental equipment and that are little by little to build up his symbolic "I"-persona.

But gradually and quite imperceptibly the child soon enters upon a new phase in the process of learning or of word-conditioning. His acquirement of knowledge or his acquaintance with the external world through his increasing store of symbols or through the extension of his vocabulary, whether auditory, visual or graphic, soon ceases to be a purely passive, afferent, receptive process. There gradually develops in the child a quite independent efferent interest in the attainment of knowledge and of information; in his desire to become acquainted with external objects and events he intentionally puts himself in the way of adding to his external experience. He begins to ask questions, to read, to listen to and observe what is going on around him. Thus, unlike the experimentally conditioned animal, the child *voluntarily* seeks to acquire words and to add to the sum of stimuli to which he is reflexly conditioned to respond. In this way he amasses a system of socially conditioned reflexes that are self-determined. The child goes to the stimulus, he seeks out the source from which the word-conditioned reflex may be derived and experienced by him. In his own cortical activity he becomes self-conditioned. In this "voluntary" impetus toward reflexes that are self-conditioned there has developed in the child a pseudo- or self-actuative persona, a persona that is largely self-conditioning as well as self-conditioned.

This system or persona fashioned of symbols and meanings to which the child was at first the passively conditioned subject and which it later gathered to itself through voluntary choice, represents a voluntary system of reflex responses which are sharply demarcated from the primary involuntary system of responses occurring within the organism as a whole. The choice of stimuli or the activating impulses which take their origin in this cortical, exteroceptive system are also entirely separate and

distinct from the impulses which originate within the organism as a whole. It is important to note that in this partial or cortical system of reflexes the resultant persona, however intricate and complicated it becomes, is built up step by step of separately conditioned items or elements, that basically the function of this symbolic persona is an additive, acquisitive one. In its process of acquisition the items or elements attainable and registered through the organism's cerebral equipment are practically unlimited.

In contrast to this gradual process of accretion characteristic of the organism's lesser ambit of behavior let us briefly review the organism's reactions as a total ambit. The reactions occurring in the total organism in response to the external environment are reactions to total situations. Here the stimulus produced by the total object or condition, unlike the symbolic, appellative stimulus to the partial or miniature segment, is a total organic stimulus. In this total sphere the organism's reactions occur always in relation to an internal central constant or to an established principle of organic equilibrium. There is here no additive process, no urge toward unlimited accumulation. There is not the invitation to immoderate acquisition or aggrandizement. If, for example, in the organism as a whole there occurs a condition of over-activity and fatigue, there results the organism's spontaneous inducement to rest. The disposition to rest, however, is not in excess of the fatigue that invites it. The organism's reaction is measured only in relation to its internal need. So with hunger, cold, the play instinct, and the sex urge, the body aims only at fulfillment, or at the restoration of the organism's natural equilibrium. Unlike knowledge or the accumulation of facts, hunger does not stimulate to an indefinite intake of food, nor cold to an unlimited degree of warmth, nor does sex lack its measure of satisfaction and repletion. In short, throughout the sphere of the organism's total response its goal is the preservation of the health or harmony of the body's function by maintaining the equilibrium of its reactions in relation to an internal primary principle or central constant. This principle or central constant operating in the sphere of the organism's reactions as a whole stands in sharp contrast to the principle of collective acquisition or mass

accumulation which, beginning with the single item and extending to more complex units, characterizes the partitive sphere of man's social, collectivistic behavior.

After all, the principle of a central constant that underlies the function of the organism as a total reaction is merely an extension of a principle of equilibration that characterizes the various cells, organs and tissues of the body. In the rhythmic beat of the heart we observe its operation in respect to a relatively constant mean. Any excess or decrease in activity is gradually restored to its equilibrium by virtue of the central norm or constant represented by this mean. So that the physiological responses of the organism as a whole are confined within set limits whose scope, however flexible, is at all times physiologically conditioned by the organism's primary constant or central *praesidium.*

When, on the other hand, we come to consider the function of the cortical segment in mediating the responses of the individual as registered in his word-conditioned reflexes, we find that this function is practically limitless in its range. It is to this widely constellated system of conditioned reflexes that man owes the entire sum of his knowledge. This system of man's symbolic, cortical reflexes embraces the whole field of his mental and social activities. All his culture, his literature, art, philosophy, and the wide scope of learning compassed under biology, physics, chemistry, mathematics and the sciences generally are an acquisition of man's system of word-conditioned responses.

We just saw that as the child develops, this originally automatic conditioning of responses by means of the word or symbol takes on an independent function. We saw that there is gradually established in the child a quite autogenous symbolic persona that possesses its own native ingenuity and inventiveness. Through this gradually acquired persona the child in turn gradually learns to condition or to control the organism's choice of the materials by which it will fashion its adaptive relation to the outer world. This the child does by virtue of the organism's use of the extrinsic constant with its fixed relation to the external phenomenal world.[22] Here we find the origin of the many mechanical devices of man's inventing in the field of engineering and of

[22] Cf. pages 338–339.

electrical mechanics, as in that of the domestic and industrial arts. So that the entire structural world of man's engineering architecture, from the fashioning and use of a pin to the construction of the tallest skyscraper, is a product of invention that has originated with the restricted symbolic persona located within the head.

Primarily, however, language or the symbol, for all its undoubted prowess, serves biologically a purely adventitious function. Man's symbolic system of reactions falls within the domain of the organism's individually acquired traits. However widespread this sphere of man's cerebral ingenuity and interchange, with its signs and symbols, the symbolic persona and its code must be taught afresh and acquired anew by each individual. The individual's facility of symbolic thought and speech does not live after him but is interred with his bones. In short, unlike the interoceptive wisdom of the body,[23] the head or the acquisitive persona with its art of symbolic invention is not biologically transmissible.

In the urgently needed readjustment of man's relation to man what seems important is the clearer objective definition by him of this bionomically distinct system with its function restricted to the item, and its aim confined to acquisition and accumulation by means of the symbol. This system represents a specific constellation of reflexes that preserves its systemic pattern throughout the life of the organism. Beneath this pattern acquired by the individual, and contrasting sharply with it in function, there is the pattern of organic reactions which is inherent in the constitution of the individual as an element in an organically continuous phylum. These two systems of reaction, the symbolic and the organic, represent, as we have said, two functionally, neurally disparate centres of motivation, or *personae*. The unity of the personality or the integrated functioning of the organism is dependent upon a physiological reciprocity between these two organic systems. While in this reciprocity the total system preserves always its prior sovereignty, the organism's contact with the external environment may at its convenience be shifted to

[23] Cannon, Walter B., *The Wisdom of the Body,* New York, W. W. Norton & Co., 1932.

the symbolic system of reflexes. The organism's motivating government, with its intrinsic constant, has its seat in the interoceptive system of reflexes and asserts its priority of function wherever it is question of direct total response to the total object. It is true that the organism's motivating principle of action is permitted to reside in the extrinsic constant of the exteroceptive system where there is question of a response to stimuli arising from the symbolic or exteroceptive field, but these two systems, the total and the symbolic, are definitely distinct from one another. Briefly, in its specific function as in its performance *the physiological pattern that underlies the organism's sphere of axial perception or of symbolic notation is fundamentally distinct from the physiological pattern that underlies the response of the organism in its total feeling-reaction and in its relation to the surrounding world.*

This distinction in bionomic function presents of itself no essential conflict. It presents no more conflict than there would be if through the use of sign or word I should direct some one to go and fetch wood for me instead of going myself to get the wood. But, due to the immense preëminence socially of the symbolic, mimetic zone of responses with their dramatic *as if* priority over the innate *as is* responses of the organic zone, the symbolic zone of responses has encroached overtly (mimically) upon the zone of the organism's reactions as a whole, crowding aside the function naturally befitting this proprioceptive sphere. This encroachment definitely involves a conflict. It involves a conflict in the principle of motivation embodied in the two separate *personae* we have differentiated as the organic and the symbolic. Such a conflict is not psychic, nor is it peculiar to certain individuals. This is but a homogenic misconception of the real conflict due to our misguided, homogenic preoccupation with the obvious index or outer reflection of it. We call our conflict psychic because in our extra-organic adaptation the only outlook we have upon our disorder is based upon premises inherent in the disorder itself. Far from affecting sporadically this or that individual, this conflict affects the functioning or motivation of the reactions of man's organism as a phylum, and its pathology is to be found in a definite overlapping and interference between the two sys-

tematized constellations or patterns of reaction we have described.

In such a disparity of physiological functioning between two mutual claimants to organic priority the situation has become such that neither the organic system nor the symbolic system may now function adequately in the bionomic adjustment of the organism to the outer world. So that the two systems we have been considering and their mutual interdependence upon one another present to the student of personality-disorders an eminently practical behavior-problem. For we are dependent upon the harmonious interaction of these two fundamental systems in man's behavior for constructing an intelligent basis upon which to handle and adjust the various problems of human adaptation arising from them—problems that are social and international, industrial and economic, as well as domestic, clinical and personal.

No student of animal behavior would attempt to reach an intelligent understanding of the animal organism and its processes except as he examined and studied the anatomical and physiological factors underlying the animal's behavior. No student of behavior would for a moment think of confining himself to the study of the external emotional expressions of an animal in his effort to understand the internal mechanism of its motivation. But in our casual appraisement of animal traits our attitude is, of course, wholly different. For example, a rabbit is quite generally regarded as a harmless animal suitable for a young child to play with, and this description applies to rabbits as a genus. But the characterization of rabbits as harmless, though generally accepted, is the result of a quite superficial, conventional judgment; it is not the outcome of the scientific observation of a quality which being structural is internal to the species. Likewise, we may characterize one dog as an amiable and affectionate companion, while we say that another shows irritability and viciousness. But again these are not observations derived from an examination of the intrinsic structure of the organism. Similarly, one may say of Mrs. Brown that she is quite agreeable, has a pleasing voice and uses excellent English, or of Mr. Jones that he is a good sportsman but is decidedly egotistical and inclined to be a woman hater. But, like the casual judgment re-

garding the rabbit or the dog, none of these conventional comments upon the mental and social traits of either Mrs. Brown or Mr. Jones possess any meaning as far as the behavioral adaptation of the two organisms in question relates itself to the generic behavior inherent to their species. And this applies not only to the domestic faults or virtues respectively of the Browns or the Joneses. It applies no less where it is a question of the dark secrets lurking in the "deep unconscious" of either of them—the sadism, phobias, the schizoid ruminations, the hysterical extravagances and so forth of the one, or the inverted sexual obsessions, the alcoholism, the neurotic compulsions and what-not of the other. Yet the entire field of the study of human behavior has until now confined itself solely to mere elaborations on the theme of such external habits and qualifications. These are the items that constitute the entire burden of our psychiatric case-histories.[24] It matters not how extensive, erudite or searching such commentaries may be, nor how outstanding the observable psychopathic deviations included in the general characterological syndrome. It matters not how deeply such psychopathological observations may penetrate into the labyrinthine recesses of the individual's waking symptoms or dream phantasies; these psychic, extra-organic commentaries are of one cloth with Mrs. Brown's estimableness, Mr. Jones' aptitude in the hunting field and the adaptability of domestic rabbits to the entertainment of children.

In the laboratories of objective science, on the contrary, observations are derived from an examination of the intrinsic structure of the organism under inquiry. In the laboratory of comparative anatomy, for example, the observation and examination of an animal, whether rabbit, dog, or man, must conform, as stated in the outset of this book, to three essential criteria of scientific observation.[25] First, the material under inquiry consists always of an actual structure and never of a mere image or idea in regard to it; second, the structure is investigated in its solid-dimensional relations, not in its mere external, surface aspects; and finally, it is studied not separately or in isolation, as

[24] Cf. pages 126–127.
[25] Cf. pages 5–6.

a Mrs. Brown or a particular pet rabbit, but as an element possessing the characteristics common to its species. The material is regarded, not superficially or in respect to its appearance or outer conduct according to casual, conventional judgment, as is the dog or Mr. Jones, but rather it is studied with respect to its internal composition and behavior. Science regards its materials as *structures* possessing common elementary components and a common basis of function. In short, the material is regarded anatomically, physiologically and chemically. It is studied intra-organically as well as extra-organically, orthogenically as well as homogenically. The scientist is interested in actual tissues and their reactions, not in the mere symbols or indices of tissues and their reactions. But a review of prevailing methods and studies presumed to encompass the behavior-disorders of man leaves us no other conclusion than that the entire category of reactions coming under the head of individual and social psychology now described as "mental" has failed to conform to any of the three primary criteria that constitute the test of scientific observation.

It seems incredible that students of human behavior—that scientists interested in the adaptation of the human organism to its environment, with all the outer complexities of social, political, economic interaction attendant upon this adaptation—should still attempt to deal with these outer manifest expressions, these mere symbolic forms of man's adaptation, rather than with the immediate organismic functions which, motivating the phylum as a whole, underlie and determine these secondary social processes. This inconsistency in scientific method is attributable only to the circumstance that in all other fields of man's preoccupation with the objective materials of observation his impetus has been directed overwhelmingly toward the projective and symbolic mode of response. Man's predominant tendency to *look at* and obtain a symbolic awareness of the object under observation has wholly misled and misdirected him in his effort to acquire an acquaintance with those total behavior-processes which, being internal to himself, underlie and motivate his own behavior-reactions.

In the group of individuals with whom I have been in daily living contact as part of an experimental basis of inquiry into the motives of human reactions, as well as in the various groups

with which my associates and I have been brought into contact in pursuit of this behavior study, all manner of casual, conventional traits, of external manifestations of feeling, of personal habituations and preferences have asserted themselves as expressions consistently characteristic of this or that individual. Where, for example, the individual was *not getting* in accordance with his projective or acquisitional system, there was the reaction of jealousy, competitiveness, moroseness, irritability, greediness, trickiness and a mood of undependableness generally. Where, on the contrary, in accordance with the lineal, collectivistic system, the individual felt his predatory aims were accorded a more adequate response, where he felt that his getting was proportionate to his habitual accumulative urge, there was found the precise opposite of these reactions. There was found all manner of goodness, generosity, kindness, affability, solicitude, sympathy and the whole gamut of conventional virtues. Along with all these superficial contrarieties of conduct, along with the goodness as well as the badness, there existed the unfailing dominance of an equally superficial self-interest in contrast to a sense of group or community welfare. And this self-interest was invariably accompanied, of course, by the appropriate compensatory gestures of deep community concern. These outer disparities and their diplomatic adjustments socially led to outbursts of spasmodic anger or to lurking grudges, to deep-seated and relentless hatreds, as well as to sentimental, narcistic predispositions toward this, that or the other individual and to corresponding narcistic and sentimental responses in return. There were, in a word, overtly, mimetically, all the bi-dimensional parities of behavior which can be described or imagined in the most elaborate system of ethical formulations. But all these "good" and "bad" qualities—qualities maintained on the basis of a mere alternative of getting or not getting—were proved wholly superficial, vacillating, accidental and impermanent. They represented qualities which were in no sense essential to the organism as a species or phylum. Readily shifting from individual to individual and from moment to moment, these reactions disclosed an underlying disposition to cling to traits which, being secondarily acquired, represented accidental conditionings. They were

not an essential or intrinsic part of the total organism, regarded either as an individual or as a species. As important, therefore, as these qualities *tended* to make themselves in one's habitual mental reaction to them, as prominent as these mental characteristics of the individual tended to become overtly or socially, from the point of view of a laboratory inquiry they were quite meaningless. They did not reflect in any way the intrinsic foundations of man's behavior as a physiological organism.[26]

On man's present cultural level of development these superficial qualities, these qualities that rest on the basis of getting or not getting, of good and bad, are the qualities upon which the behavior of individuals is everywhere judged throughout civilization. It is these superficial behavior-motivations which incite nations to war. It is such motivations that lead to an individual's punishment with death or to his imprisonment for life, as it is this basis of judgment which in the prevailing social and mental estimate of human behavior causes some persons to be judged insane while others are accounted normal.[27] On the other hand, among those adjudged normal this superficial estimate encourages the selection of certain individuals as representing special value to the community because of their adeptness in handling to their own advantage such behavior-opportunities as rest upon these mere outer appearances of character or qualification.[28] Under the system of individual relations that is called politics this superficial basis of adjudication in regard to human behavior may raise to the highest position within the gift of a nation men who are utterly lacking in a basic behavioral appreciation of the qualities that make for fitness and permanence in the service of the community or the race.[29] It is the dominance of these superficial systems of behavior that completely subordinates the judgment of outstanding scientific men to the favor or disfavor that may arbitrarily arise from such whimsical and emotionally colored prepossessions. Unfortunately this lighter, more super-

[26] Cf. Chapter II and pages 259–260.

[27] Cf. Chapter III, page 57.

[28] Burrow, Trigant, "The Heroic Rôle—An Historical Retrospect," *Psyche* (London), 1926, Vol. 6, pp. 42–54.

[29] Lippmann, Walter, "Aspects of a Philosophy of Government in a Sick World," *Bulletin of The New York Academy of Medicine,* 1935, Vol. 11, pp. 673–680. See also note 29, page 141.

ficial, more conventional mode of values and of evaluation carries with it to-day an enormous and immeasurable social impetus, an impetus that derives entirely from the displacement in man of the sovereignty of a balanced, coördinated pattern of adaptation by a pattern of adaptation that rests upon a wholly secondary, projective system of collective itemization, acquisition or symbolic accumulation.

Thus, because of the tremendous achievement of man in the projective field of the symbol and the item as they appear to his external senses, he has been completely carried off his feet as regards his own intrinsic reactions, and he has accordingly lost touch with the proprioceptive factors internal to his physiology as a total behavior-expression. In his relation to the outer world man's impetus to acquisition as a collective whole has abrogated overtly the organism's primary central constant with its basis for controlling man's relation to the objective world as an organically functioning whole.[80] In a very true sense, therefore, man's behavior-motivation is without a dependable basis, and in his effort to repair this organic breach he tends to look everywhere but to this basis of sensation and feeling internal to himself as a primary principle of activation or behavior.

We shall not remedy this basic disorder by occupying ourselves with the itemized expression of it in this or that individual —not any more than we would correct the inherent cause of typhoid fever by alleviating this or that symptom as it appears in this or that patient. We have, primarily, not a single affect attaching to a single symbol nor a complex of affects attaching to a complex of symbols. We have a systematized and self-regulated persona composed of symbolic reactions on the one hand and a systematized and self-regulated persona consisting of primary internal sensations on the other; and it is not the item in each system uniting with the item in the other (the symbol on the one hand, the affect on the other) that accounts for man's disordered behavior-reactions either individual or social. Man's behavioral disorders are to be accounted for by the overlapping and conflict between the organism's lesser and greater ambits—between the two constellations represented in the physiological

[80] Cf. pages 116, 162, 176–178, 215.

patterns or mergents respectively of man's two functionally systematized *personae* throughout the species.

Driven by the impetus of his acquisitive, partitive system, man has learned to invent and to shape out of the fabric of his phantasy elaborately constructed machinery of wood and steel, and at the behest of this same symbol-system man's machinery now performs the work which originally was performed only through the labor of his total organism. This labor-saving device of man's own inventing now adroitly harnessed by him to the service of his needs has far exceeded in its capacity of energy-production man's own innate energy and productiveness. Accordingly, this externally devised machinery constructed through the genius of man's symbolic or acquisitive persona now far exceeds and outreaches the needs of man as a primary organic persona. The inevitable consequence is a world-wide imbalance between man's production and his consumption of the materials adapted to his use as a phylum. This organic imbalance due to the fact that man's production is not organically integrated with the needs of the phylum means the destitution of millions of individuals through lack of the commodities which the machinery of man produces at his own partitive instigation. But in his internal confusion man has not yet reckoned with the arbitrary interpolation of this symbolic or itemized persona nor with the distorted impetus to acquisition and accumulation inseparable from his partitively reversed affects. He has not seen that the cause of this wide-spread behavioral anomaly is the overwhelming impetus within him of his own acquisitive and accumulative system as it has gradually heaped up and engulfed him because of the exaggerated emphasis he has placed upon the symbol, the mental item or the outer index.[31]

It is useless for man to attempt to escape the domination of this symbolic mode or to adjust his dilemma by destroying the machine which his dilemma has merely misapplied. It is not the machine operating in the field or the factory that is man's undoing. His undoing is the machine that operates within man himself at the behest of his own acquisitive drives rather than in response to his primary organic needs. Man's ineptitude and

[31] Cf. page 190.

embarrassment consist in the fact that the unregulated, uncontrolled system of images which activates the symbolic persona has overtly taken over the control of man's total organism in the world of his external relations, precisely as this system of images and its acquisitive basis has taken over within each individual the control of objective processes whose use and adjustment belong primarily to the organism as a whole.

We have seen that formerly it became necessary, in the sphere of organic disease affecting individuals and communities, to supplement the clinical study of the individual with the laboratory study of the community through inaugurating investigations into the causation of community-wide infections. So, in respect to the sphere of those physiological processes which affect the organism of man in his inter-individual contacts and relationships as a phylum, it has become necessary to-day to supplement our clinical findings respecting man's individual symptomatology with the introduction of laboratory methods that will secure the biological health and integrity of the race of man as a whole.

In the days when the Church was the sole arbiter of human behavior and, being "One, Holy, Roman and Apostolic," the faithful throughout the world looked unquestioningly to its authority as a central principle of jurisdiction over them, man's symbolic or partitive systematization found in this all-pervading immanence a comforting and reassuring guide and preceptor. By virtue of this spiritually encompassing office of the Church, throughout the Western World man's "thinking" was done for him upon a colossal social scale. Through the ministrations of the Church a vast system of mental therapeusis was ever present with counsel and encouragement. If by reason of untoward circumstance there occurred in this or that individual marked deviation from the community's systematized, partitive modes of adaptation—if there occurred the dissociation of adolescence we know in its exteroceptive systematization as hysteria, and in its interoceptive systematization as schizophrenia—the Church with its monastery and convent and their welcome reminiscence of the preconscious was immediately at hand to offer the mentally disturbed youth hospitable cloister. Here the family's favorite son or daughter might be adopted outright by the community's All-Loving Father

and unanimously received into the wider family of saints and ministers whose conventual, social systematization offered the postulant complete congeniality, and corroboration of his own fanciful cosmogony.

To-day in a world of increasingly competitive social images and affects the split personality of the deviate adolescent lacks recourse to the hospitable asylums offered by the Church. He knows only the enforced hospitalization of the sanitarium or the prison. The nearest parallel to this earlier form of domicile is to be found in the vicarious *Confiteor* of psychoanalysis. True, it must be admitted that in this modern method of affording healing to the sick and errant soul there is provided no mean vicar. In transferring the Holy See from Rome to the great cosmopolitan centres of Europe and America, the essential principle has remained no less "One," "Holy," and "Apostolic." Underlying both the old and the new form is always to be found the social systematization of the preconscious. But whatever may be the symbolic transformations of the preconscious—despite all its external, dichotomous symbolizations of right and wrong, of just and unjust, of death and resurrection, of heaven and hell—the principle still remains "sanctified," "unitary," and of "divine" tradition.

The influence of the Church in past times and its wide-spread therapeutic function were of enormous significance sociologically, and the present-day student of behavior has not reckoned with the seriousness of its withdrawal from a world of symbolically and partitively motivated behavior. To-day, of course, there are institutions presenting opportunity for welfare work and other forms of community activity, for example the wide field of trained nursing. And these vocations, though more objective, undoubtedly offer an ameliorating substitute for Mother Church. But unlike the accommodations of the Church, in these institutions there is not offered the preconscious element of phantasy upon which dissociated youth so largely depends for its vicarious support. Thus within an increasingly objective world of thought and action youth stands alone and stark, and his plight has become an increasingly desperate one. The recourses of youth in this wide-spread social crisis have become proportionately desperate. Of these we have been the only too poignant witness.

What if with alcohol and kindred drugs man *can* momentarily allay the organism's partitive tensions and afford local easement to the intra-neural stress of his conflict? There inevitably follows his essential "sobering" to the actualities of his exteroceptive maladaptation as a species. Or what if through the administration of insulin we may jolt a dementia praecox patient out of his interoceptive, shut-in systematization? After all, he has only been jolted into an exteroceptive systematization which in a basic, organismic reckoning—for all its social plausibilities—is no whit less specious or pathological in its adaptation. Obviously the preconscious regressions of man as well as our efforts to circumvent them afford him no stable, no dependable safeguard against the increasingly acute problem of himself in a world of adult problems in social and economic adaptation. Obviously the plight of our youth is but an index to the plight of man the world over, and in this plight there lies before man and within him no more wholesome, no more basic demand than that of his obligation to his own organismic life as a race or species. This organismic life, as we saw earlier, has its physiological origin in the organism's *prima materia* or the preconscious. As the preconscious origins of man's motivation are essentially physiological this maturer need is also physiological. This need of man is to be met only as its physiological distortions externally projected in the symbols of the unconscious may be rendered observable within the laboratory of behavior-experimentation.

But the task that man faces in the problem of man as he finds himself to-day in the midst of a highly complex social and economic system is very different from the problem of the animal psychologist in approximating two separate, discrete stimuli as they affect some animal existing outside of and apart from himself, the while he looks on and notes what happens in the animal's reaction. Man's problem is that of observing *within himself* the evidence of two physiological systems which normally would have existed as discrete patterns but which, through the accidents of his growth, have become too closely approximated one to another. He needs to come to grips with this bio-physical circumstance in order to see and to *feel* (that is, to perceive through sensations internal to himself) what has happened within

his own processes as a result of these conflicting systems of motivation and activity within him.[82] He needs to see not only what is happening to himself and to his feeling but also that what is happening to himself and to his feeling is the expression of processes resident within himself, and he needs to recognize that these processes consist of definite tensions and strains artificially inculcated in him in the course of his social evolution. Man needs to see that these strains and tensions mark an internal physiological conflict and that only the objective recognition by him of this internal conflict will make possible his clear observation and ultimate elimination of his disorders of behavior. These deflected organismic tensions and strains that beset the human phylum will no longer harass and misguide the life of man when he himself will, of himself, have turned sharply about and, recognizing his pain and conflict as a condition of his own making, will confront squarely these disorders of his own internal behavior-processes.

CONCLUSION

With the completion of this book there is concluded a definite phase of the work of my associates and myself. In the main this phase, which is an extension of the period of investigation described in my earlier work, *The Social Basis of Consciousness,* represents an inquiry into the nature of the motivations underlying the reactions of individuals in social groups or communities. In general it may be said that this study warrants the conclusion that behavior-disorders, whether individual or social, represent not an external, mental imbalance but an imbalance that is internal and physiological. That is, the neurosis is seen as an internal impairment in organismic patterns of action as they relate the organism's internal and external environments. The neurosis is not individual but phyletic. It is not mental but bionomic. Man's interpretation of dissociation as mental is due to his dissociative and mental

[82] Cf. pages 287–291, 329–334.

interpretation of it. The interpretation and the dissociation are part and parcel of the same bio-physical imbalance in the organism's relation to the outer world of objectivity.

The frame of reference from which normality now reasons "cause and effect" rests upon a fanciful repudiation of man's organismic principle of function as a race. The organism's primary physiological function as a species has by implication been abrogated in substitution of a fanciful "mental" world of adaptation. In this arbitrary miscarriage of his basic bionomy man has become related only symbolically, allegorically, to the world of reality. From this misdirected slant man "thinks of" reality as something outside of, opposite to and apart from himself. So that as things stand to-day with "normal," collectivistic man, he is not interested in creative production or in workmanship. Unlike primary organismic man he is concerned only with working and the getting of work. In his false adjustments, due to his projection of the symbols and indices of reality rather than his incorporation of them within him, he is concerned only with acquisition—with recovering, or getting back within him—the dissociated element or part which he himself dissociated and made a thing *apart from* and alien to his organism. His interest, his motivation is not expressed in his organism's inexhaustible wholeness of participation in relation to a whole world of space and time. But from a subjectively piecemeal premise, he sees the world outside of him piecemeal. From this basis the life of man has become throughout itemized, politico-social; it is not whole or proprio-social. It is divided into infinitesimal bits or parts and into indefinitely complex concatenations of parts when, in truth, man's life is primarily composite of an infinite and indivisible whole.

If medicine is adequately to appraise the condition of division and conflict existing within the community under its guise of "normality," we shall have to adopt a fundamentally altered attitude toward the problem of mental disease. We shall have to apply to these manifestations the same qualitative methods of study that have characterized medical research in other fields.

The absence of peace, of order within the processes of man is world-wide. But this lack of harmony is not resident within the sphere of man's ideas. It is not to be found in his political dis-

sensions, his religious disparities, his social and economic conflicts. Neither is the seat of his disorder to be found in what has been described as his neurosis, crime or insanity. These manifestations are but the external signs. The real disorder consists of a lack of coördination and peace that is primary and internal to man. The disorders of behavior we have called mental are to be found in organic processes that are as clearly demonstrable objectively, qualitatively, as the disordered processes responsible for other diseases occurring within the organism.

Man is undoubtedly ill-adjusted and unhappy. There is not alone the ill-health of the individual but of nations, of the world at large. Philosophy, metaphysics, academic education, politics or economics will not avail. The need is definitely a physiological one. In the disturbance of order and harmony within man's personal and social processes we are confronted with basic, underlying causations internal to the organism. We are confronted with a fundamental disturbance in the internal motivations of man as a species. The investigations of individuals and of groups, as conducted by the scientific staff of The Lifwynn Foundation, have made evident that these internal disharmonies in behavior-motivation are traceable to a conflict between definite neuromuscular patterns of reaction. They have made it evident that as these patterns are physiological and internal to the organism they may become perceptible and amenable to remedial measures only in the degree in which medicine adopts an internal technique of procedure that will give to these processes clear physiological definition and enable us to deal with them in their immediate underlying objectivity. When disorders of human behavior, individual and social, have been stripped of their purely ideological, metaphysical implications and we have assumed toward them the same scientific attitude we have adopted toward clinical disease-process as it occurs in this or that specific organ or tissue of the individual—only then will medicine have fulfilled the full scope of its obligation to deal objectively with disordered human processes.

The reader will recall that in Chapter Nine I spoke of our need to employ man's native organic dimensions in evaluating human behavior. For in the absence of organic dimension it is impossible to bring qualitative measure to our findings. As long as we deal

with "meanings" that are merely symbolic, that afford but dimensionless, mental indicators of function rather than with those stereognostic neuromuscular reactions which possess solid dimensional reality for us as kinesthetic organisms, we cannot look for the same qualitative and quantitative findings we are accustomed to expect from data obtained in the fields of objective science.

From a frame of reference that is internal, dimensional, neuromuscular the concern of the physician interested in disorders of behavior will confine itself solely to the physician's own behavior-disorder. He will endeavor to remedy the disturbed tensions underlying the distrait and distorted signs and symptoms of his patient only through maintaining within himself a consistent or total pattern of reaction such as will tend automatically to reactivate within the patient the patient's own total basis of motivation. In the attainment of this altered procedure as in any unaccustomed adjustment, one undoubtedly meets with difficulty. But the difficulty to be met is not an intrinsic one. It is a difficulty due solely to our own social systematizations or habit-oppositions. The sole requirement is an altered basis of reference or a shift in the organism's internal neuromuscular innervations. But this altered behavior-reference requires to become social or community-wide if it is to be efficient, precisely as the altered basis of behavior in respect to other disease-entities was required to become community-wide in order that it be efficient within the life of the community.

On this basis the neurotic patient has no more moral or social responsibility toward his disorder than the diabetic or tubercular patient has toward his distorted processes. In the latter diseases the responsibility lies with the physician and his scientific understanding of the actual metabolic alterations underlying the patient's outer symptoms or appearances. Likewise where there exist lesions which are reflected in the outer signs and symptoms of a disturbance of man's organism as a whole, the physician's moral and social responsibility concerns his own internal, organic appreciation of a needed adjustment that is equally internal and organic within himself and his patient. His effort in assisting the adaptation of his patient depends solely upon the functional integrity of processes within himself that are common and identical

in their relation to a common and identical world existing outside both himself and the patient.

Specifically, the investigations in human behavior, clinical and community, of which this book is the outcome, give indication: (1) That disturbances of adaptation or disorders of behavior are the expression of a condition that is universal to man; (2) that the outer signs of this condition commonly called mental—manifestations we observe clinically in the neuroses and psychoses, juridically in crime, and socially in our various economic, political, familial and religious modes and manners of adaptation—represent only the variable and secondary symptoms of a deeper-seated, more basic disorder affecting the physiological processes of man as a race; and furthermore that the mental interpretations now given in explanation of these bio-physical behavior disturbances also belong to this same superficial and extraneous system of signs and symbols which they attempt to interpret; (3) that the real disturbance in the balance or coördination in man's behavior of which we see the outer symptoms in the various expressions of man's mental life is due to a disturbance in the organism of man that is perceptible only *within* him; (4) that this bio-physical disturbance affecting the organism's internal processes is rendered perceptible within man only as we employ a non-mental (non-symbolic) method of observing this non-mental condition existing within his processes, and that it is not to be perceived by looking outside of man or inquiring symbolically, *mentally* into it; (5) that this internal disturbance of function existing within the internal processes of the race is traceable to a conflict between those physiological tensions which preserve the organism's bionomic security and integrity as a whole in relation to the external environment as a whole and those physiological tensions which tend to preserve the social relationships of individuals to one another through the mere part-expressions of security and integrity we now project in our mental and social images of "right" and "wrong"; (6) that these two systems of adjustment of the organism to the environment belong to two distinct bionomic patterns of adjustment internal to it and that these two physiological patterns are discriminable through the difference in tension perceptible in the region of the organism's symbolically operative segment—a seg-

ment possessing a function common to the two systems, namely, the eyes and their adjacent structures. This discrimination in function becomes appreciable according as the primary, total adjustive pattern of the organism as a whole or the secondary, partitive pattern (the individual's social image of "right" or advantage in relation to other individuals) maintains supremacy over the organism's behavior in relating it to the surrounding environment.

Having come to see our mental cosmogony as the expression of an essentially bio-physical basis of interrelations, it should be possible to bring the phenomena occurring within this sphere to qualitative and quantitative test. If partitive patterns of reaction are brought into relation to the external world through external stimulation of them, it does not seem excluded that the external indices of this innovation in man's neuromuscular behavior should receive definite instrumental measure as well as a comparative record of their relation to neuromuscular tensions and configurations primarily controlling the organism's behavior as a whole. Experimentation in this direction has already been under way with us, and with the assistance of my associates, the succeeding years will be devoted to the continued effort to apply such instrumental measures of experimentation as may permit us to isolate these deviate neurosocial processes and so bring the bio-physical behavior of man to the test of precise measure and evaluation.

GLOSSARY

Affect: The distorted composite which results when the organism's total pattern of motivation is overtly superseded by the symbolic or partitive pattern of behavior. This reaction involves a false and unwarranted amalgamation of feeling and mental image. (Contrasted with the organism's total feeling. Synonym: image-feeling.)

Attention: Mental focus. Attention commonly entails special concentration upon an object or feature of the environment. But as here used the term applies to man's selection of a sign, part-feature or symbol of an object or phenomenon as it *represents* or stands in place of the object or phenomenon itself. Is selective, specific, restricted. (Contrasted with cotention.)

Bionomics: The branch of biology that has to do with the relation between organism and environment. (Synonym: ecology.)

Central Constant: The organism's primary motivating principle or its total action-pattern—the functional consistency of the organism as a whole. (Contrasted with extrinsic constant. Synonym: intrinsic constant.)

Cephalic Segment: See exteroceptive segment.

Collective Whole: Additive sum of the parts composing a unit or substance. (Contrasted with organic whole.)

Collectivistic: See politico-social. (Need I say that my use of the term collectivistic bears not the slightest relation to its conventional, economic meaning.)

Cotention: Total reaction of the organism to environmental situations. The reaction characterized by the organism's general state of activation and receptivity. *Co*tention fuses the organism and the environmental situation into an interacting whole. To be contrasted with *at*tention in which a part-function of the organism is tense and seeks to attend to specific environmental data through restricted sensory avenues (chiefly the visual). An example of cotention is the physiological rapport established between the responses of the expert juggler or skater and the total stimulus situation. The organism does not *look at* but becomes a dynamic part of the environmental complex. The element of *looking at* or of mental

preoccupation with would disrupt its performance. Contrariwise, examples of attention are concentration upon mental studies or the learning of verbal material, etc. Both types of bionomic adjustment to the objects of the environment (cotention and attention) are useful to the organism. The attentive mode, however, is ineffective in mediating man's primary relationship to man; in regard to his feeling-life the total cotentive function alone carries authority.

Cotentive Function: Constellation of tensions internal to the organism. These tensions determine the biologically correct relations of the internal organism in respect to the external world. Example: the maintenance of the body's balance.

Dichotomous: Containing two categories with opposed characteristics.

Ecology: The subdivision of biology which deals with the relation of organisms to their environment. (Synonym: bionomics.)

Empathic: Here used in the sense of the organism's primary feeling motivation and response. (Contrasted with projective feelings or "affects.")

Endotonic: Referring to internal tensions.

Exteroceptive Segment: The region of the head containing the two predominantly exteroceptive sense-organs—the eyes and the ears together with the organs of speech. (Contrasted in its function with the function of the organism as a whole. Synonyms: symbolic segment, cephalic segment.)

Extra-organic: Refers to processes which do not involve primarily the intrinsic reactions of the organism as a whole. (Synonyms: partitive, symbolic, homogenic, microgenic.)

Extrinsic Constant: Secondary principle which relates to the partial reaction-patterns of the cortex and conforms symbolically to the principle of organic consistency that governs the external world. It is subordinate to the organism's primary principle or intrinsic central constant. The organism's extrinsic constant regulates the secondary, partial system of word-conditioned reflexes, while its intrinsic constant regulates the organism's primary, total reactions. (Contrasted with intrinsic or central constant.)

Feeling: The total, spontaneous response of the organism to stimuli naturally affecting the empathic system. The sensations arising as a spontaneous reaction within the organism as a whole. (Contrasted with affect or "projected feeling." Synonym: empathic reaction.)

Generic: See phyletic.

Graphogenic System: The system of part-functions pertaining to the

cortical reaction-zone; the partitive or picture-forming mechanism in man. (Contrasted with stereogenic system, stereonomic system. Synonyms: graphonomic system, index-system, homogenic system. From γράφειν, to picture, and γένεσις, production.)

Graphonomic System: See graphogenic system.

Group-Analysis: The name originally given to the type of behavior-analysis first conducted among groups by my associates and myself. From the beginning this term meant for us a generic analysis, not an individualistic analysis. Although the method was usually employed in settings where a number of individuals participated, "group-analysis" in no sense meant the collective psychoanalysis of an aggregate of people. It definitely meant an analysis of the processes motivating the phylum man in contrast to the personal analysis of individuals singly or collectively. Because of this fact the more recently evolved techniques of collective psychoanalysis differ fundamentally from this phyletic method. It soon became apparent, however, that the community was determined to interpret group-analysis as the analysis of a collection of individuals and the name was therefore changed to "phyloanalysis" to indicate the open, generic nature of the analysis and differentiate it from the closed, individualistic method. "Group" thus refers to the biological principle of analysis employed. This principle once acquired is as applicable in settings where only one or two persons are present as in sessions where the participants number twenty or more individuals. Distinctive features of group- or phylo-analysis are: (1) Behavior-disorders are regarded as a common condition affecting patient and physician alike. Patient and physician are not placed in two opposed categories in which the "sick" patient needs help and in which the "well" physician can help him, but physician and patient alike, as elements in a sick society, are placed in the position of investigators of a community behavior-aberration in which they are both commonly affected. (2) The sole material of interest is the material composing the experimental situation as presented in the immediate moment. Reminiscent data, however dramatic or sexually flavored, are of insignificant value in the group-analytic method. (3) The interest and emphasis is not placed upon the ideas, images and opinions expressed by the participants but upon discernible, underlying physiological strains and tensions as they are subjectively and objectively perceptible. (4) The therapeutic attempt is not in the direction of substituting acceptable images, ideas and opinions for the unacceptable ones held by the patient. Rather the attempt is to replace conflicting physiological patterns of tensional adjustment with tensional constellations which are physiologically congruent. (5) It is the

phyloanalytic position that no behavior-adaptation within the single individual can be healthy and complete in the absence of a healthy basis of behavior-adjustment within the community as a whole. The therapeutic attempt, therefore, is not merely to heal the individual but to develop a healthy community basis of behavior that will be effective throughout the organization of man as a phylum.

Homogenic: Signifies like-begotten (ὁμός = same, γένεσις = production. Cf. homologue, homosexuality.) Not to be confused with homogeneous or homogenous. (Synonym: extra-organic.)

Homogenic Mechanism: The symbolic, part function of the organism in relation to an object. (Contrasted with orthogenic mechanism.)

Homogenic Reaction: An index- or likeness-conditioned response of the organism. Represents a restricted reaction and usually involves affect. (Cf. conditioned response of Pavlov and the redintegrative sequence of Hollingworth. Contrasted with orthogenic reaction. Synonym: partitive or symbolic reaction.)

"I"-Persona: The identity- or personality-summation that synthesizes man's socially inter-functioning symbol-exchange. While this "I"-persona represents the sum or whole of the cortical, selective or symbolic system, the "I"-persona *does not represent the organism as a whole.* It represents a cortical or symbolic identity and is restricted to the organism's selective relationship to the external world of actuality. But there has been the overt shift of internal and total feeling-sensations into this partitive or symbolic zone. With the attempt to symbolize or project by means of the cephalic segment feelings and sensations that are specific to the organism as a whole, there has resulted the artificial conversion of these total sensations into partitive and divisive "feelings" or affects. Through this mechanism the "I"-persona becomes throughout a purely partitive, affective identity. Primarily the "I"-persona comprises a behavior-system that is built up in conformity with the physical consistency governing the external world of phenomena. In its proper symbolic function it may operate quite consistently in relation to the world of external reality, but having come to represent only a secondary, peripheral system of the organism, it possesses only a secondary, peripheral reaction-constant. (Contrasted with organic persona. Synonyms: social substantive "I," pseudo-persona.)

Identical Reaction: A reaction that contributes to the organism's biological need. For example, an organism experiences hunger and replenishes itself with food appropriate to it. (Contrasted with incongruous reaction.)

Image-Feelings: Reactions incident to the organically and biologically unwarranted amalgamation of image and feeling. Entailing a dis-

tortive, organically disjunctive element, they always involve conflict, individually and socially. (Contrasted with primary feeling which represents the total empathic expression of the organism as a whole. Synonym: affects.)

Incongruous Reaction: A reaction inimical to the organism's needs. Example: excessive consumption of food or its inappropriate selection. (Contrasted with identical reaction.)

Index-Ambit: The sphere that embraces the organism's partial, conditioned mergents. (Contrasted with total, bionomic ambit. Synonym: partial ambit.)

Index-Mergent: See partial mergent.

Inter-cortical: Refers to the interrelationship among individuals by means of the sign, word or symbol. As phyloanalysis deals with the organism of man as a race, it is necessary that we distinguish between the interrelationships which mediate communication between individuals symbolically or mentally and those avenues of contact which are mediated through the common instinctive reactions of organisms in their entirety. In man's inter-cortical functioning only the restricted, cortical segment of one individual is brought into contact with the cortical segment of another. (Contrasted with *intra-se,* intra-generic. Synonyms: inter-individual, *inter-se.*)

Inter-individual: See inter-cortical.

Inter-se: Relationship between individuals on a basis that assumes they are organically separate or discrete. It refers to the partitive, affective, projective basis of relationship. (Contrasted with *intra-se.* Synonyms: inter-cortical, inter-individual.)

Intra-organic: Refers to organismic patterns of reaction—the instinctive reactions that are unitary and congruent throughout the race as a whole. (Contrasted with inter-cortical, inter-individual, or *inter-se.* Synonym: *intra-se.*)

Intra-se: Within each individual and within the species of man as an integrated whole. (Contrasted with *inter-se,* inter-individual, inter-cortical.)

Intrinsic Constant: See central constant.

Macrogenic: See orthogenic.

Mental Aberration: On the basis of phylobiological investigations what are called mental or psychic aberrations are but the outer symptomatic expression of an underlying physiological conflict. These superficial manifestations, however blatant externally, are not to be regarded as the actual disorder nor may the disorder be remedied by applying mental or psychic measures. The physiological disturbance of which mental and psychic aberrations are the sympto-

matic expression is not confined to the obviously maladjusted individual. It underlies the reactions commonly called normal, for this physiological disturbance is resident within the processes of man as a race, impeding and distorting his interrelational activities.

Microgenic: See homogenic.

Miniature Behavior-System: The cortical, symbolic, linguistic system. Restricted chiefly to the cortex and its function in relation to the production of the symbol and of language. (Contrasted with the more generalized behavior of the organism in its reaction as a whole.)

Morphology: The term is used in a sense not intrinsically different from its customary meaning, but in a sense that involves an altered basis of interpretation with respect to the morphological data observed. Phylobiology, however, does not adhere to the type of structural interpretation which attempts to trace the source of mental disorders to the presence of some hidden disturbance within a specific organ or part, for example, to an impairment of function in the thyroid or adrenal glands or in the endocrine system in general. In my use of the term morphology, it relates specifically to those racial adaptations which have induced definite functional alterations in man in the process of his biological development as a species. For any alteration of function that has become racially crystallized is *de facto* a morphological alteration. Analogous examples of such functional alterations are the structural modifications coincident with the altered function in man entailed by the change from the pronograde to the erect posture. The morphological alterations in which my interest centres are internal to the organism of man as a whole and are due to man's social or intercortical behavior-relations. Phylogenetic researches offer evidence that within the neuro-tensional configurations of man as a species or phylum there exist certain morphological modifications which are now habitually reflected in his mental and social reactions. Unlike the structural changes coincident with the erect posture now assumed by man, these morphological alterations are due to functional processes within the species which are reversible or subject to modification. It is the purpose of the phylogenetic technique to render observable within ourselves as individuals of a common species those functional alterations which have exerted a detrimental influence upon the behavior of man's organism as a whole.

Nest Instinct: See The Preconscious.

Neuro-semiotic Mechanism: The picture-forming mechanism. Represents the exclusive function of the exteroceptive segment as it operates in the production of the image, the idea or the symbol.

Neurotic: This term takes on a broader significance than that customarily attached to it. Neurotic behavior is not looked upon as characteristic alone of the clinically deviate individual. It is equally to be seen in such social extravagances as religious dissension, political intrigues, financial elation and depression, crime and war. From a phylobiological view-point the affective behavior of the average "normal" individual is biologically as uncoördinated and neurotic as are the phantastic and extravagant reactions of the dissociated patient.

Normal: The term "normal," as it is used generally in relation to behavior, has the connotation of healthy and coördinated. This meaning is not implied in the present thesis. On the contrary, the term represents merely the reaction-average obtaining among individuals generally. Phylobiological investigations indicate that this reaction-average expresses a purely social and not a biological norm. In this sense, therefore, no premium whatever attaches to "normal" behavior. Nor will the reader find in this work the customary attempt to restore the deviate individual to normal or average reaction-tendencies. Normal human behavior is regarded as but a socialized aspect of a deflection in behavior that is racial.

Organic Identity: The subjective correlate of the organism's primarily integrated or total behavior-pattern. The constellation of responses embodied in the organism's total principle of motivation. (Contrasted with symbolic persona. Synonym: organic persona.)

Organic Persona: See organic identity.

Organic Whole: The organism's unitary basis of function. The function of the organism as a whole is one that is uncomplicated or undivided by reactions which are partial, separate or secondarily differentiated from the organism's primary reaction. The organic whole is based upon an underlying principle of integration within the organism that implies something more than the mere sum of its parts. (Contrasted with collective whole.)

Organism as a Whole: Refers to a principle of integration that is organic and not to the sum of parts represented by the collective whole. The organism's function as an organic whole may remain completely intact even where there has been serious mutilation and loss of individual parts.

Organismic: Implies a whole that is phyletic as well as organic. From this frame of reference we must look upon man as an organically interrelated whole, whether regarded individually or socially.

Orthogenic Mechanism: The total coördinative function of the organism. (Contrasted with homogenic, extra-organic mechanism. Synonym: intra-organic. From ὀρθός, correct, fitting, and γένεσις, production.)

Orthogenic Reaction: Reaction regulated in terms of fitness and internal congruity of the organism as a whole in its coördination with the environment as a whole. The organism's primary feeling response or total mergent. (Contrasted with homogenic reaction.)

Orthotonic: The organism's total tensional configuration. (Contrasted with paratonic.)

Parapathia: Disordered feeling.

Paratonia: Disordered tensions.

Partial Ambit: See index-ambit.

Partial Mergent: A partial pattern that has become functionally split off from the total pattern and has assumed artificial independence of the organism's primary basis of motivation. A conditioned reflex, in which a sign or associated element does service for the primary total stimulus, represents a partial reaction-mergent. The partial or false mergent always involves an artificially conditioned affect that overtly replaces the sovereignty of the organism's total feeling motivation. (Contrasted with total or true mergent. Synonyms: false mergent, index-mergent.)

Partitive: Partitive processes are processes which are mediated by the part-functions of the organism restricted to the cephalic segment and which make contact only with the part-features of outer objects. This, however, is not the full implication of the term. In the process of man's evolution, there has developed a racial condition in which the feeling sphere—the sphere of man's essentially total reaction—has secondarily become associated with his partitive, symbolic, cortical system of reactions. As a result of their artificial shunting into an essentially symbolic system, total feelings have themselves become overtly distorted into mere partitive expressions and now issue in image-feelings or affects. The term "partitive," then, applies to those feeling reactions which have ceased to issue as the direct expression of the organism as a totality, such reactions having been secondarily displaced into the organism's symbolic segment and attached to signs and symbols. It applies also to the more connotative, perceptual and linguistic function of the cephalic complex. The term should not be confused with Coghill's use of "partial" to which, however, it is closely related. (Contrasted with total, macrogenic, organismic. Synonyms: symbolic, affective, microgenic.)

Partitive System: The system of inter-individual, inter-cortical relationships built up of word-images or symbols. This usage applies to the selective function of the symbol-forming mechanism as contrasted with the function of the organism as a whole. It also indicates the selection of a part or sign in replacement for the

total object itself. When applied to reactions occurring within the empathic sphere it signifies the short-circuited, partitive feelings or affects.

Periphery: Those external body-structures through which the organism reacts to the surrounding environment. It includes not only the epidermal and dermal structures with their tactile and other sense organs but also the external skeletal muscles through whose kinesthetic function the organism establishes its relation spatially to the surrounding environment. The periphery, as here defined, includes that portion of the total organism which, in general, is controlled by the voluntary muscles and innervated by the cerebrospinal nervous system.

Phyletic: Existing throughout man as a species. (Contrasted with ontogenetic, individual. Synonyms: generic, racial, phylogenetic.)

Phyloanalysis: The analysis of behavior-disorders from a background which does not regard the disorder as confined to this or that individual, nor attempt to "cure" a patient of this or that symptomatic behavior-deviation. It regards the neurosis as an internal tensional disorder that affects mankind throughout, and the therapeutic emphasis is directed toward a basic physiological reorientation of the total organism in relation to the total environment. (From φυλον, phylum, race. Synonym: group-analysis.)

Phylobiology: The science of behavior that rests upon principles which pertain to man's reactions as a phylum as they mediate his bionomic rapport with his social and material environment.

Phylopathology: The scientific investigation of the underlying causal factors in behavior-disorders as envisaged by phylobiology. It includes in its scope the behavioral disturbances both of neurotic and of so-called normal individuals, and seeks to develop and apply principles to cope with these disturbances on a broad, organismic basis.

Phylum: The zoologically minded reader will wince perhaps at my callous use interchangeably of the terms race, phylum and species. I can only extenuate this somewhat audacious laxity on the ground of its greater handiness. On the other hand, the reader should be well aware that I do not use the term race in the customary ethnological or geographical sense but in the broader meaning of the zoologists. (Synonyms: race, species.)

Physiological: The term refers to definitely perceptible processes internal to the organism. Nervous or behavioral disorders are regarded as due to definite physiological conflict or embarrassment within man's organism as an individual and as a race, not to the false ideas, impressions and affects personally acquired by him.

Man's behavioral impasse—his neurosis, individual and social—is seen as the expression of a physiological discrepancy in tension; on the other hand the psychic or mental component possesses a purely ancillary, epiphenomenal significance. (Contrasted with psychic or mental. Synonym: organismic.)

Politico-social: Having to do with man's socially systematized affects or wishes—with the social images and "rights" that commonly phantomize the organism's basic, phyletic functions. (Contrasted with proprio-social, organismic. Synonym: collectivistic.)

Preconscious, The: The primary phase or mode of consciousness of the infant in which there is complete identification with the mother organism. This mode represents a non-libidinal, a pre-objective phase in the organism's development. Many subjective experiences occurring in the individual's later adult life—experiences marked by an absence of the competitive and the contentious—indicate their close relationship to this primary, preconscious mode. It finds symbolic expression in poetry and in literature, in dreams, in the phantasies of the insane. Not to be confused with the psychoanalytic term "preconscious" or "foreconscious." (Synonyms: primary identification, the nest instinct.)

Primary Identification: See The Preconscious.

Proprioactive Response: Process, activity or behavior resulting from stimulation of proprioceptive sense-organs. (Contrasted with exteroceptive response. Synonym: proprioceptive response.)

Proprioceptive Response: Not to be confused with proprioceptive reflex as generally used in the psychological literature. See proprioactive response.

Proprio-social: Interests and activations motivated within the organism as a whole. (Contrasted with political-social, collectivistic. Synonym: organismic.)

Psychic: As here used the term "psychic" indicates the domain of man's behavior that is restricted to his verbally conditioned reactions—the domain of man's mental and symbolic activities. In the interpretation of psychiatry and psychoanalysis man's disorders of behavior are due to disturbances within this psychic or mental sphere—in the sphere of his ideas, wishes and beliefs with their adherent affects. The accepted remedy for these disorders consists accordingly of mental or psychic treatment. It consists in the effort to substitute for those socially aberrant ideas, wishes and the sensations based upon them, ideas, opinions and sensations which find social corroboration in the wider community. Phylobiology, on the other hand, does not consider that the cause of man's behavior-disturbances is to be found primarily in the psychic sphere. It

resides rather in certain inappropriate tensional constellations affecting man as an individual and as a species. The logical approach, therefore, to these conditions is an internal, organismic or physiological approach. The wider connotations implied in the word "psychic" as they refer to human culture, learning, etc., are not for a moment repudiated in the present definition. (Contrasted with physiological, organismic. Synonyms: mental, symbolic, partitive.)

Pseudo-Identity: See "I"-persona.

Pseudo-Persona: See "I"-persona.

Race: See phylum.

Resistance: In phylobiology this term possesses broad biological significance. It has not the restricted application of the psychoanalytic school where it is used in referring to a patient's unconscious opposition to disclosing to the analyst his repressed childhood experiences, actual or fancied. "Resistance" is not limited to this inter-personal, clinical setting but is regarded as being socially characteristic of and constantly operative among "normal" individuals. The term as here applied refers to the presence of a socially constellated defense-reaction by which individuals and communities automatically secure themselves against a realization of the quite illusory and fanciful nature of their habitual contact and communication inter-individually or socially.

Semiopathic: The organism's affective or emotionally distorted use of the symbol. The tendency of the symbolic or semiotic (partitive) reaction-pattern to impinge upon the organism's total pattern of behavior and the concomitant trend toward the overt substitution of projected affects for intrinsic feeling. (From σημεῖον, sign, symbol, and πάθος, feeling.)

Semiotic: See symbolic.

Social: The organism's partitive or word-conditioned system as mediated through its inter-individual, inter-cortical or socially systematized relationships. (Contrasted with generic, phyletic.)

Social Image: An affective impression representing crystallized opinions and prejudices which are deeply ingrained in the individual and corroborated by society, but for which there is no objective, demonstrable foundation. These images are emotionally conditioned and are to be sharply distinguished from the legitimate images one forms of some object or phenomenon as determined by its structure or inherent meaning. The social image has no direct relation to the object or situation upon which it is projected. It is wishfully determined and is not based on reality. It consists, in fact, of a socially sanctioned illusion. Examples of the social image are to be found in such constellations of affective ideas or

images as are seen to be bound up with one's conception of the Church, the State, the home, marriage, God, one's country, one's neighbor, one's self.

Social Substantive "I": See "I"-persona.

Socio-biological: Social phenomena are the outgrowth of a fundamentally biological matrix. The social sciences have largely overlooked these biological foundations of the organism and as a result personal opinion, speculation and pseudo-authoritative principles tend to dominate this field. The term "socio-biological" is used with a view to reintegrating these two aspects of man's behavior—external social phenomena and the fundamental biology of man—which according to phyloanalytic investigations embody an essential totality.

Species: See phylum.

Stereogenic: Total-dimensional response of the organism as a whole to its total-dimensional environment. Contrasted with homogenic or extra-organic which entails a mere symbolic, part response of the organism to a part-feature of the environment. In the homogenic reaction the organism responds to the often irrelevant part-feature as though it were the original, biologically adequate stimulus. (Synonym: stereonomic.)

Stereogenic System: The organism's general bionomic system of adaptation to the outer environment. (Contrasted with graphogenic system, graphonomic system. Synonym: stereonomic system.)

Stereognostic Perception: The coincidence empirically established between the space-time relations of the outer, objective world and the space-time relations comprising the organism's internal, subjective coördinations. (Contrasted with symbolic, exteroceptive perception.)

Stereonomic: See stereogenic.

Stereonomic System: See stereogenic system.

Subjective Space-Relations: Orientation with respect to objects *outside* the organism by means of the internal, tensional orientation existing *within* the organism.

Symbolic Persona: The sum or complex of the organism's word-conditioned responses. See "I"-persona.

Total, Bionomic Ambit: The sphere of the organism's total mergents. Not limited to the use of the symbol and its affective attachment socially. (Contrasted with partial ambit or index-ambit.)

Total Mergent: The natural response of the organism as a whole to the object as a whole. Represented in biological interaction of organism and environment. Examples: Recourse to shelter against

cold, to food in response to hunger, to mating in response to sex tension. The spontaneous, instinctive behavior of the organism embodies a total reaction-mergent. Cf. identical reaction. (Contrasted with partial mergent. Synonym: true mergent.)

Total Organism: See organism as a whole.

True Mergent: See total mergent.

Wish-Fulfillment: The mechanism by which situations are so pictured or interpreted as to comply with the individual's subjective wishes rather than with objective reality. In phylobiology there is an organismic broadening of the term as contrasted with its use by the psychoanalytic school. It is emphasized that this mechanism is not by any means limited to the neurotic individual, but it is a false motivation prevalent throughout normal processes everywhere. The phenomenon of wish-fulfillment is a social reaction. It affects man as a species and is traceable to disordered tensions that are definitely organismic.

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